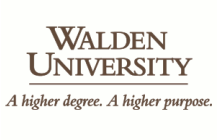

2017

Food Waste Reduction Strategies in Supermarkets: The Lived Experiences of Perishable Food Managers in Michigan

Kelly K. Zimmermann
Walden University

Walden University

College of Management and Technology

This is to certify that the doctoral study by

Kelly K. Zimmermann

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

Review Committee
Dr. Patricia Fusch, Committee Chairperson, Doctor of Business Administration Faculty

Dr. Janet Booker, Committee Member, Doctor of Business Administration Faculty

Dr. Patsy Kasen, University Reviewer, Doctor of Business Administration Faculty

Chief Academic Officer
Eric Riedel, Ph.D.

Walden University
2017

Abstract

Food Waste Reduction Strategies in Supermarkets:

The Lived Experiences of Perishable Food Managers in Michigan

by

Kelly K. Zimmermann

MBA, Davenport University, 2011

BBA, Davenport University, 2008

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Business Administration

Walden University

December 2017

Abstract

At the retail level, 25% of sellable food is wasted, and perishable foods account for 72% of food waste in the United States. The purpose for this qualitative phenomenological study was to explore the food waste reduction strategies used by supermarket perishable food department managers, which are covered under the Good Samaritan Food Donation Acts (state and federal). The participant population was comprised of 17 managers who are responsible for perishable foods departments (bakery, deli, meat, dairy, and produce) at local, regional, and national supermarkets in Midland, Michigan. Goal systems theory served as the conceptual framework lens for which the findings of this study are viewed. Data collected centered around long interviews and publicly available company documents. Interviews and field notes, including member checking, were transcribed and analyzed using NVivo software. Using methodological triangulation of these data sources, 3 themes emerged from the data analysis: the knowledge level of participants relative to the Good Samaritan Food Donation Act, factors that influence food waste and management strategy, and existing food waste reduction strategies. Most front-line managers are not aware of the Good Samaritan Food Donation Act. Factors that influence food waste include sell-by dates, personal bias, and food handling regulations. Existing food waste reduction strategies include donations, price reductions, stock rotation, and in-store repurposing. Positive social change may result from the results of this study if food waste can be further reduced or more food redirected to the needy. The study findings may be useful to supermarket managers as they consider the protection at the state and federal levels that the Good Samaritan Food Donation Act offers.

Food Waste Reduction Strategies in Supermarkets:

The Lived Experiences of Perishable Food Managers in Michigan

by

Kelly K. Zimmermann

MBA, Davenport University, 2011

BBA, Davenport University, 2008

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Business Administration

Walden University

December 2017

Dedication

This body of work is dedicated to my friends, family, even co-workers, for their support as I worked through this project. They endured countless hours of shopping (observational research), lecturing, and pontificating on the subject of food waste and the occasional pointed glance when I observed particularly wasteful behaviors. Specifically, I wish to thank my soul mate. For without his guidance, love, support, and specific methods of encouragement, I may not have found the strength and the courage to finish it. He may not have been there for the entire journey, but he was there at the finish line … and to me, that means everything.

Acknowledgments

I would like to thank Dr. Patricia Fusch, my committee chair. Her guidance, knowledge, and expertise were of great value to me as I completed this study. I have the utmost respect for her leadership and cannot thank her enough for the encouragement she provided in the years we worked together on this project. I would also like to thank Dr. Kurt Kirstein for his initial guidance when he was my committee chair. I'd also like to thank Dr. Janet Booker for the SCM review and Dr. Patsy Kasen for URR review. Your attention to detail has helped me produce a better contribution to the overall body of knowledge. Dr. Gene Fusch also deserves an honorable mention for his expertise and assistance getting me through my first review and oral defense. I will always remember his kind and encouraging voice. Special thanks also to Dr. Freda Turner and to Dr. Michael Millstone, who left lasting impressions on me during the academic residencies. Collectively, you have worked to develop me and this study, always with an eye for what is best for the project. Walden University has a great DBA program and I'm proud to be a part of the graduated student body.

Table of Contents

List of Tables

Section 1: Foundation of the Study

According to the United States Environmental Protection Agency, the volume of American food waste is staggering (US EPA, 2012, p. 1). The EPA pointed out that in 2010, food waste in the US amounted to 34 million tons and was the second largest category of waste product behind paper (US EPA, 2012). Globally 1.2 billion metric tons or one-third of all food produced for human consumption is lost or wasted (Venkat, 2012). This translates to lost revenue for businesses along the food value chain (Buzby, Wells, & Hyman, 2014). The behaviors of both retailers and consumers constitute some of the reasons food is wasted, yet further study could clarify actionable interventions for supermarket managers (Farr-Wharton, Foth, & Choi, 2014; Venkat, 2012). Buzby et al. (2014) noted that it is important to explore consumer behavior because consumer behavior drives business decisions. Moreover, it is essential to explore how consumers respond to retail marketing practices for perishable foods in order to increase profits and reduce food waste (Buzby et al., 2014; Tootelian, Mikhailitchenko, & Varshney, 2012), as food waste costs the average supermarket $450,000 annually (Ketzenberg, Bloemhof, & Gaukler, 2015). Furthermore, it is important to study supermarket managerial behavior because supermarket managers have the authority to make decisions that could affect food waste reductions (Gravlee, Boston, Mitchell, Schultz, & Betterley, 2014; Ketzenberg et al., 2015). Also critical to explore is the Good Samaritan Food Donation Act and the lived experiences of supermarket managers in this space.

When considering the issue of food waste, it is critical to define what food waste is and what food waste is not (Buzby et al., 2014). The International Congress defined

food waste as food that is lost or wasted that was destined for human consumption (Buzby & Hyman, 2012). Food products such as crops grown for animal feed or energy utilization, which are not destined for human consumption, are not waste and are not included in waste metrics (Buzby & Hyman, 2012). However, natural resources are still required to grow these products and are costly to food producers, distributors, and retailers (Buzby et al., 2014).

Food waste from products that were destined for human consumption falls into two categories: recoverable or not recoverable (Buzby et al., 2014). Examples of food and potential waste that are recoverable are crops left on the field after harvested, unsold cosmetically rejected produce, excess prepared food from restaurants, and damaged retail food products (Buzby & Hyman, 2012). Examples of food waste that are not recoverable include diseased livestock or produce, rotten food, plate waste from restaurants or institutional food settings, and products discarded when processing foods (Buzby & Hyman, 2012).

Recoverable food waste for calendar year 2009 in the United States amounted to over 55 million metric tons or $197.7 billion (Venkat, 2012). Of the estimated $197.7 billion in total waste, $124 billion is avoidable consumer waste, or $644 per capita/year (Venkat, 2012). Throughout the food value chain, members utilize natural resources to grow, process, package, transport, and store food products and resource utilization carries environmental concerns, given the finite nature of the Earth's natural resources (Venkat, 2012). Greenhouse gas (GHG) emissions attributed to avoidable food waste are 112.92 million metric tons of carbon dioxide equivalents (CO_2e), or per capita emissions of

367.82 CO2e (Venkat, 2012). The per capita figures included here are important because food waste contributes to GHG emissions in two ways, first through decomposition of food in landfills, and second through the emissions produced during food production, processing, distribution, and storage (Venkat, 2012). The proposed study will focus on perishable food waste at supermarkets in Midland, Michigan and the lived experiences of supermarket managers relative to the Good Samaritan Food Donation Act. I will share data and statistics gathered in the research of the proposed study with the participant group in order to further educate the participant population as to the scope of the problem and potentially provide insight that may increase understanding as well as revenues for supermarkets.

Background of the Problem

Confirming that there is an issue with food waste, one study revealed that over $42 billion of fruits and vegetables were lost to wasteful practices in 2008 alone (Buzby et al., 2014). The downward spiral of resources continues when harvested food sources go unused, which translates to lost revenue for food producers and retailers, over $450,000 annually for the average supermarket (Buzby et al., 2014; Ketzenberg et al., 2015). As edible food sources make their way to the landfill, the resources required to grow the food are also wasted (Venkat, 2012). Ecological implications of food waste include the fact that food waste now accounts for nearly one quarter of the total freshwater consumption and 23% of fertilizer use (Kummu, et al., 2012). A reduction in food waste could contribute to an increase in food security, as well as contribute to the health of the global economy and the environment (Kummu et al., 2012). The

significance of the proposed doctoral study lies in the positive social impact that could result from changed behaviors. Consumers are at times uncertain as to freshness or quality, and as such, fruits and vegetables losses occur when these items do not meet the aesthetic standards required by American consumers (Dobrucka, Cierpiszewski, & Korzeniowski, 2015). Specifically, businesses suffer lost profits due to wasteful behaviors when edible crops do not make it from farm to table (Buzby et al., 2014). Additionally, purposeful utilization of the resources needed to grow these crops could result in better business practices downstream in the food value chain, ultimately increasing profits for supermarkets (Buzby et al., 2014).

Problem Statement

Perishable foods account for 72% of food wasted in the United States (Hickey & Ozbay, 2014). Fruit and vegetable food waste costs the U.S. economy $42.8 billion per year in the United States alone, with meat, poultry, and fish losses reflective of an additional 4.5% of the overall waste (Buzby et al., 2014). At the retail level, 25% of sellable food is wasted (Buzby et al., 2014; Ketzenberg et al., 2015). To encourage food waste donations, the state of Michigan updated the Good Samaritan Food Donation Act in 1993, which protects supermarket food donations from criminal liability when donating to the needy rather than disposing in landfills (Wie & Giebler, 2013). The general business problem is that supermarkets lose potential profits from the waste of perishable food. The specific business problem is that some supermarket managers have limited lived experience of reducing food waste through the Good Samaritan Food Donation Act.

Purpose Statement

The purpose of the proposed qualitative phenomenological study is to explore the lived experiences of supermarket managers who reduce food waste through the Good Samaritan Food Donation Act. Twenty supermarket managers will participate in phenomenological long interviews to share their lived experiences of a common phenomenon. This population group and scope are manageable within the confines of the proposed study. The geographic location for this study is Midland, Michigan. Through improved business practices and additional insight into consumer food selection behaviors, food producers, and retailers may better manage inventory and reduce waste (Garrone, Melacini, & Perego, 2014). Implications for social change are in the downstream effects of better business practices including reduced perishable food waste, which could lead to insight for supermarket managers on how more effectively manage perishable food inventories.

Nature of the Study

The proposed study is qualitative in method and phenomenological in design. In order to explore the issues at the center of the food waste phenomenon in a specific geographic area, it will be necessary to capture the lived experiences of supermarket managers in Midland, Michigan. The qualitative method offers the best approach for capturing the lived experiences of participants because this method allows deeper exploration of the subject, and does not constrain the researcher, resulting in a richer narrative (Moustakas, 1994).

Phenomenology enables the researcher to gather and record the perspective of the person or persons experiencing the phenomenon, versus reading articles, reviewing cases on the topic, or delivering quantitative analysis (Moustakas, 1994). This is important to the proposed study because capturing the lived experiences of the specific population will provide a deeper understanding of the existing strategies used to combat food waste, than a quantitative design delivering purely statistical analysis. A researcher conducting a study that is quantitative in method may uncover results that indicate there is food waste, but such results may not explain why the phenomenon is occurring. A mixed methods approach may be suitable, but would take more time than is available for work on the proposed study (Yin, 2014).

If this research were to focus on a specific cultural group, an ethnographic study may have been appropriate, but a cultural focus is out of scope for this study (Van Manen, 2014). This type of study would have enabled the contrast and comparison of food waste across cultural types, but that design would have narrowed the research too far (Van Manen, 2014). The narrative research method would have facilitated the re-telling of participant stories, but in the case of the proposed study, there are no stories to re-tell. There are perceptions and behaviors that influence buying and consumption patterns. The case study method would have required information collection beyond personal interviews (Yin, 2014) and it would have been difficult to select a case for intensive study. An ethnographic study would explore the culture of a group, which is not the intent of my study.

Research Question

The overarching research question for the proposed study is: What are the lived experiences of supermarket managers who reduce food waste through the Good Samaritan Food Donation Act. The proposed doctoral study research will address this question through phenomenological long interviews with supermarket managers.

Interview Question

What is your lived experience as a supermarket manager reducing food waste through a donation protected by the Good Samaritan Food Donation Act?

Conceptual Framework

In this study, the lived experiences of supermarket department managers are explored through the lens of goal systems theory. Humans make choices between means and goals and such choices compete for mental resources often resulting in a rationalized decision relative to the means, the goals, or both (Miller, 1944; Thyberg & Tonjes, 2015). Routine business operations may present opportunities where a manager must decide between seemingly conflicting goals, such as to increase available varieties of perishable foods and reduce inventory, a situation that is the core construct of the conceptual framework for this study. In 2002, goal systems theory pioneer Arie Kruglanski suggested that decision making motivation is a conscious activity and that multiple goals may be influenced at one time through the cognitive processing of environmental factors (Kruglanski et al., 2011). Exploration of the layering and dynamic process of evaluating a goal construct in the consideration of a decision (Thyberg & Tonjes, 2015) further adds to the theoretical foundation of this research. Over time, goal systems theory has evolved

to demonstrate that during goal attainment completion of a singular goal or completion of several goals results in goal achievement – these goal configurations are equifinality and multifinality respectively (Chun, Kruglanski, Sleeth-Keppler, & Friedman 2011). Goals are important in the context of this study because goals, whether short-term, or long-term, influence business strategies and marketing practices (Thyberg & Tonjes, 2015).

Definition of Terms

The following are terms that are specific to the proposed study.

Food secure (security): A food secure individual is one who has access to a safe and nutritious food supply (Buzby et al., 2014). Someone may be considered food insecure if they cannot reasonably travel to a safe food supply, or the available food is if little nutritional value.

Food value chain: The food value chain is the growth, harvest, processing, packaging, transport, and storage of food supplies (Venkat, 2012) and refers to all of the processes and procedures necessary to grow food, process food, and deliver it to the consumer.

Food waste: Food waste is food that is lost or wasted that was destined for human consumption (Buzby & Hyman, 2012). Foods by-products that end as fuel or animal feed are not considered food waste.

Green consumerism: Green consumerism is a behavioral pattern accompanied by a sense of responsibility (Pino, Peluso, & Guido, 2012). Individuals that recycle are practicing green consumerism.

Assumptions, Limitations, and Delimitations

Assumptions

Assumptions are the foundational tenets of a doctoral research topic such that the study rises up around these basic concepts (Leedy & Ormrod, 2012). Assumptions include that each participant in the proposed study is capable of making decisions relative to strategies employed to reduce food waste, which each participant engages in some level of supermarket department management, and that each participant carries the mental capacity to absorb educational material on the subject and take steps to further reduce food waste or employ new strategies. Unlikely any changes will result directly from the interview. Another assumption is that current food waste reduction practices of this population are similar to food waste reduction practices across the nation in similar supermarkets (particularly chains such as Meijer or Wal-Mart).

Limitations

Limitations are potential weaknesses in research and include possible bias on the part of the researcher (Leedy & Ormrod, 2012). The study involves a small group of supermarket managers in a small city in central Michigan in which the population is comprised of rural and urban supermarkets. I will interview supermarket department managers in order to explore their lived experiences regarding existing strategies used to reduce food waste. The timeline is short and is a snapshot in time of the behaviors of this participant group. The research methodology and materials are documented and available should a future researcher choose to replicate the study, thereby mitigating the limitation of the short timeframe of the research window.

Delimitations

Delimitations are factors within a researcher's control and define the parameters of a study (Leedy & Ormrod, 2012). This study does not focus on socio-economic factors that may influence food consumption or waste. This study focuses purely on the lived experiences of supermarket managers who reduce food waste through the Good Samaritan Food Donation Act. The geographic location for the proposed study is Midland, Michigan, a small city in central Michigan. Adjoining communities are not within the scope of this study.

Significance of the Study

Impact of Study

The purpose of the proposed qualitative phenomenological study is to explore the lived experiences of supermarket managers who reduce food waste through the Good Samaritan Food Donation Act. This research will contribute to the overall body of knowledge and the results will offer information as to specific decision-making trends and insight for supermarkets of similar size in similar geographic locations. Supermarket managers may be able to use the results of this study to improve their marketing plans and inventory strategies (van Donselaar & Broekmeulen, 2012). In addition to improved business strategies, it may be possible to reduce food waste if supermarket managers implement improved strategies.

Implications for Social Change

Food loss and waste in developed countries like the United States averages over half a pound per person per day (Thyberg & Tonjes, 2015). Food loss and waste in

developed countries is primarily due to consumer behavior, including quality standards (a bias against slightly blemished food) and poor planning relative to shopping trips and product expiration dates (Buzby & Hyman, 2012). Neither supermarket managers nor consumers are fully aware of the effects of wasteful behaviors nor what strategies exist at the supermarket level to curtail perishable waste (Buzby & Hyman, 2012).

The purpose of the proposed qualitative phenomenological study is to explore the lived experiences of supermarket managers who reduce food waste through a Good Samaritan Food Donation Act. Reductions in food waste are likely to contribute to improvements for individual families and the environment (Buzby & Hyman, 2012) as well as reduce costs for and improve responsiveness of retailers (Soysal, Bloemhof-Ruwaard, Meuwissen, & van der Vorst, 2012). Food waste is likely to end up in a landfill where it combines with other waste and create methane gas and results in further ecological implications (Hickey & Ozbay, 2014). The effect on the environment is significant given that methane gas as a greenhouse gas is 25 times stronger than carbon dioxide – which would have been the greenhouse gas produced if the food had been metabolized by humans (Kummu et al., 2012). Furthermore, the fertilizers and pesticides used to grow the food compound the effect, as do the fossil fuels used to transport and refrigerate or otherwise preserve the food (Kummu et al., 2012). This study could contribute to social change through sustainable and improved marketing strategies for supermarket managers (resulting in increased revenue for supermarkets) and reduced landfill load for the environment (Hickey & Ozbay, 2014).

A Review of the Professional and Academic Literature

The purpose of the proposed qualitative phenomenological study is to explore the lived experiences of supermarket managers who reduce food waste through a Good Samaritan Food Donation Act. Food management and supply has evolved as humanity has evolved. From the early beginnings of human societies and hunting-gathering communities, to the modern supermarket, humans have learned and accomplished new and more efficient methods for managing the food supply.

The following literature review consists of contemporary peer reviewed research for studies in six key categories, including a history of food supply and consumption including distribution evolution, perspectives on potential factors that contribute to food waste, environmental concerns associated with food production and food waste, a return to sustainable or subsistence food supplies, education as a catalyst to modified behavior, and inventory and marketing techniques for perishable foods. Furthermore, the literature review includes peer-reviewed studies that address limitations, weaknesses, and potential for future research in each category. Other sources include statistical reports, relevant dissertations, and scholarly books.

The Walden library databases including Science Direct, ProQuest, EBSCOhost, and Google Scholar were the primary resources to obtain the sources and search routines included articles that were full-text, scholarly, and peer reviewed. Key words in the search criteria included *food waste, food value chain, perishable waste, retail waste, retail marketing, marketing innovations, supermarket management, supermarket operations, perishable inventory management, sustainability,* and *environmental*

implications. The emphasis was on peer-reviewed studies that were less than 5 years old from the anticipated graduate date as well as relevant seminal works. Of the 74 references cited, 92% of peer reviewed journal articles were from the year 2012 or newer.

Food Supply and Consumption

To understand the current state of the food supply, it is necessary to take a step back and review how human food supplies have evolved over time. The time-line of human evolution relative to food supply and consumption begins with hunting-gathering societies in the Early Holocene period 10,000 B.C.E., followed by the Neolithic transition 8,500-2,500 B.C.E. to the beginning of the Industrial revolution in 1750 (Cook, 2014). The Neolithic revolution marks the transition from a hunting-gathering society to one dependent upon agriculture for food stores, and before this transition, populations were nomadic, spending their non-sleeping time searching for food and shelter (Cook, 2014).

Prior to the Neolithic revolution, humans used every part possible of the animal or food product – survival depended on an efficient use of food collected (Cook, 2014). During this formative period in human history, humans learned to manage food supply through farming of crops and building knowledge of animal husbandry (Cook, 2014), as well as learned to trade with other human settlements for things that could not be grown or produced within the community (Cook, 2014). Billen, Barles, Chatzimpiros, and Garnier (2012) pointed to farming of animals and produce as a mechanism to control the food supply, rather than be in constant chase of it. Through these activities, humans developed a variety of food options that sustained geographic populations and led to the rise of local dry goods shops, and subsequently supermarkets (Billen et al., 2012).

Chains of self-service grocers (later called supermarkets) began appearing around 1916 and satisfied the need for meal alternatives, given war rationing and diet propaganda, such as ‘wheatless Mondays’ (Tunc, 2012).

Post war economic expansion served as the catalyst that led to the modern supermarket, and the variety available at the modern supermarket has led to a critical consumer (Tunc, 2012). Supermarkets provided convenience for the consumer through ‘one-stop shopping’ for meat, dairy, and produce items and provided a marketplace in which burgeoning food manufacturers and distributors could profit (Hickey & Ozbay, 2014). The competitive landscape in the supermarket industry changed significantly over the next 50 years, giving rise to industry giants such as Kmart, Wal-Mart, and Target (Hanner, Hosken, Olsen, & Smith, 2015). Hanner et al. (2015) focused specifically on the competitive nature of the industry and suggested that larger supermarket firms compete almost exclusively regarding price, supported by the variety of merchandise offered, while smaller firms, farm stands and such were more monopolistic in a given area. Hanner et al (2015) also suggested that consolidation at the retail level would push back into the supply chain and drive consolidation at the manufacturing level – beginning the longstanding partnership of Big Food and Big Box retailers, while successfully squeezing out local markets (Hanner et al., 2015).

From 1960 through the end of the twentieth century, there seemed to be little room in the North American marketplace for anything other than industrialized agriculture (Feldmann & Hamm, 2014). In fact, there was a small pocket of resistance in the form of consumer desire for organic foods (Feldmann & Hamm, 2014). Alternative

agricultural initiatives, such as organic foods, existed based on certain fundamentals, including 'farm to table' food distribution, concern for the environment, and community engagement (Feldmann & Hamm, 2014). Feldmann and Hamm (2014) suggested that there is a battle for food democracy and that as leaders in the industrialized food system become aware of the consumer desire for organic foods the organics sector narrows into the existing competitive paradigm.

The struggle for food democracy continues in urban areas where Brenes, Ciravegna, and Montoya (2014) and Trebbin (2014) posited that it might be more difficult for urban consumers to access food in areas without the supercenters that dominate the suburban landscape. Trebbin (2014) suggested that foods sold at chain retailers in cooperation with local farmers have enabled significant transformation in food delivery to local citizens. Brenes et al. (2014) pointed to the transition from supermarkets to supercenters in the 1990s as a key driver for consolidation and decreased competition. This transition, which gave rise to massive floor space expansion enabling significant inventory increases and breadth of merchandise carried (Brenes et al., 2014).

McIntyre, Karden, Shyng, and Allen (2014) posited that despite the rise in supercenters and industrialized food supplies, alternative food systems, such as local organic suppliers, developed. McIntyre et al. (2014) highlighted a concern that such alternative food systems would not be able to survive in the market driven system that exists in the United States and had struggled in Canada. In order for these alternative food systems to be successful, participants in the food system (consumers primarily)

would need to understand the impact of their food choices and view food as a tool for social change (McIntyre et al., 2014).

At odds with consumer vision of food as a tool for social change is the consumer demand for inexpensive food options and consumer demand for a more diverse food supply. Muhammad, Fathelrahman, and Ullah (2015) stated that while consumers want a more diverse food supply, consumers are willing to pay extra for organic foods and a variety of factors were influential including age and household income. As the consumer demand for a cheaper and more diverse food items increased, imports of agricultural products also increased, signifying that domestic production was not enough to meet the demand, or that imports were cheaper than domestic options, or perhaps a combination of these factors (Muhammad et al., 2015). In response to the increasing demand for fresh fruits and vegetables, the United States expanded its sourcing of these items to include developing countries – now these items are available in United States year-round (Wang & Li, 2012).

If the demand for fresh fruits and vegetables is increasing and the items are available, logic would dictate that a dietary shift is taking place, yet research showed that the typical diet of a U.S. consumer is comprised of dairy products, refined sugars, oils and fatty meats (Wang & Li, 2012). The same research suggested that quality played a major role in consumer decisions to eat more fresh fruits and vegetables. This is a significant point for the proposed study in that specific research suggests that quality is a factor in influencing consumer food choices and associated ecological behavior in the United States (Wang & Li, 2012). A point of interest to researchers in the field is that

even though imports of items such as fresh fruits and vegetables have increased, consumption does not appear to be increasing at the same pace and this pattern suggests that a deeper look at what is happening to these food items if they are not being consumed would be appropriate (Wang & Li, 2012).

Once a food is imported, grown, or manufactured, distribution occurs through a complex system. While on the surface simplistic, this distribution system involves a distribution center or wholesaler, a retail or foodservice outlet, and finally, delivery to the consumer. Critical to the safe delivery of food products is temperature control (Yu & Nagurney, 2013). While keeping foods frozen or refrigerated may be top of mind, keeping foods at ambient room temperature is also important, and avoiding temperature extremes may play an important role in delivering a saleable item (Yu & Nagurney, 2013). Appropriate temperature is important for food safety, but is also essential to food preservation while in transit or on display (Yu & Nagurney, 2013). Appropriate temperature can influence a products shelf appearance, which may influence whether or not a consumer selects the item. Yu and Nagurney (2013) stated that temperature control and efficient distribution are two key factors in promoting sustainability in the food industry, particularly for perishable items.

Sales of perishable items are a strong source of revenue for supermarkets, through deli and bakery departments, in addition to traditional supermarket departments such as meat and produce (Theotokis, Pramatari, & Tsiros, 2012). With this revenue stream comes a unique set of manageable circumstances, including temperature and packaging. In their 2012 study, Theotokis et al. stated that expiry date based pricing influences

consumer purchases and have a positive impact on food waste. Of particular importance is that consumers base their judgment on the quality of a store by its meat and produce – this provides valuable insight as to foods that consumers feel are important. This also explains the variety offered by retailers in this area (Theotokis et al., 2012). Understanding the consumer thought process is important because it would enable managers to make better decisions on what to stock to avoid 'shrinkage', which is waste due to spoilage (Yu & Nagurney, 2013). One factor that leads to spoilage is the expiration date on the item. These researchers suggested that retailers discount the items approaching expiration in order to motivate consumers to purchase these items, which would benefit society by reducing the waste caused by spoilage (Theotokis et al., 2012). Theotokis et al. (2012) also suggested that educating consumers about food dating practices, specifically that food dating is voluntary, and not government regulated, would contribute to reduced spoilage. Also, there is the suggestion in the research that key to reducing waste is for the retailer to understand consumer behavior and to educate the consumer, specifically with respect to product freshness and expiration labeling (Theotokis et al., 2012).

Pino et al. (2012) stated that 'green consumerism' is a behavioral pattern accompanied by a sense of responsibility and is part of a consumer's self-identity. The researchers also stated that consumers gain a sense of personal fulfillment when purchasing locally grown food, or food grown in a sustainable fashion (Pino et al., 2012). The positive effects on the environment that organic local farming can bring strengthen this feeling of personal fulfillment. Pino et al. (2012) also pointed out that these traits are

exhibited by regular consumers of products produced in this fashion, and less so by occasional purchasers. The researchers stated that it is possible to bridge this gap in purchasing frequency through targeted campaigns and outreach, which may also produce consumers who are better educated and will likely lead to improved health for current and future generations (Pino et al., 2012, p. 158).

Factors Contributing to Food Waste

Measuring the amount of available food for consumption and related food loss can be difficult to quantify, but the Economic Research Service (ERS), a division of the United States Department of Agriculture, conducts periodic analysis as to volume and types of foods at the greatest risk for loss and waste. According to Buzby, Wells, and Hyman (2014), the ERS calculates food available for consumption by combining the results of production with the food contained in beginning stocks, imports and ending stocks then subtracts the amount of foods exported to arrive at a figure that represents the available food supply for the nation. Also factored in are food products with non-food uses. Buzby et al. (2014) stated that food loss occurs throughout the food value chain. Importantly, while good data is available to track losses at the farm and retail level, documentation of consumer-level food loss data is lacking (Buzby et al., 2014).

Concurrent with research to determine the value of consumer-level food loss is the research into factors contributing to consumer-level food loss (Li, Cheang, & Lim, 2012). Thyberg and Tonjes (2015) posited that food loss is undervalued and underreported and that the factors influencing such waste are varied. The researchers determined that income, household size and location, contributed to variations in food

consumption patterns. The researchers stated that environmental impacts associated with food loss vary across food categories with chilled perishables being the most affected (Thyberg & Tonjes, 2015).

Buzby and Hyman (2012) opined that food losses begin on farms through the effects of severe weather (drought or freezing, depending on the circumstance). Mechanization of the farm environment also contributes to losses, as equipment cannot possibly retrieve every item, nor can these machines discern between ripe and non-ripe fruits or vegetables (Buzby & Hyman, 2012). The losses continue, and this is a critical point, with consumer demand for blemish-free produce (exacerbated by prosperity) – which has an effect on the produce selected for sale by the producer (Buzby & Hyman, 2012). Discarded items included produce that does not meet certain cosmetic standards at the processing facility. These researchers also concluded that plate waste (including spoiled refrigerator food) is a huge contributor to food loss, and that consumer education is an essential component to stemming consumer food loss (Buzby & Hyman, 2012).

Bloom (2006) revealed that another important factor that contributes to food waste is that often, farmers will plow through produce fields because it is more expensive to pack and transport the harvest than the economic benefit they would receive from selling it (known as a 'walk by'). Bloom included an interview with a farmer in which the farmer admits to planting an extra field of collard greens, just in case the demand was higher than his initial field could supply. Bloom further posited that some farmers contend that it is more convenient to 'plow under' the crops than to donate them – the act of donation takes precious time and is inconvenient (Bloom, 2006). While the farmer

contemplated a pick up from a recovery operation like a soup kitchen, the recovery operation's management was trying to decide whether there were funds enough to spend on the gas to pick up the free food items – funding in general continues to be problematic. Even with the passage of the Bill Emerson Good Samaritan Food Donation Act, which protects farmers and processors from legal trouble from food donations, surprising amounts of food still end up the landfill. One such example are factory rejects of bags of salad mix that are not cut correctly by the cutting machine and are left connected to each other (Bloom, 2006). Bloom (2006) pointed out that it is cheaper to discard these items than to cut them by hand. Clearly, American consumers need to adjust their behaviors to reduce food waste, but America's producers and processors could also benefit from a values adjustment, and improved operations as Bloom cites that over-ordering is a major contributor to food waste at the supermarket level (Bloom, 2006).

Bloom stated that a proper assessment of household food waste is difficult, given the inherent privacy of the home environment – and that when surveyed may not answer accurately out of embarrassment (Bloom, 2006). An interesting fact that Bloom's research uncovered is that the more predictable the family menu, the less waste there is and that any food purchase considered an anomaly brings with it increased risk of waste (Bloom, 2006). Bloom also posited that consumers finish a shopping trip with good intentions of eating all of the fresh foods purchased, but a busy schedule may dictate picking up a pizza instead – which results in wasted fresh food (Bloom, 2006). Bloom also concluded that overprotective food safety guidelines distributed by the U.S. Department of Agriculture contribute to food waste when consumers think they must

throw out an item because it is at or over its ‘use by’ date. What most consumers are unaware of is that these ‘use by’ dates are quality indicators, not food safety indicators – another example where education for the consumer is critical to reducing waste (Bloom, 2006).

In a study conducted by Redman and Redman (2014), the researchers posited that consumers may not be aware of the consequences of their eating habits, for instance, and food waste reductions at this level would require behavioral change. The researchers stated that utilizing local educators in the K-12 environment may influence consumers at a younger age thereby providing a basis for longer term ecological influence (Redman & Redman, 2014).

Environmental Concerns

Along with the macro and micro economic concerns associated with food loss and waste are environmental concerns. According to Buzby et al. (2014), of the 250 million tons of solid municipal waste in the U.S. in 2008, 31.75 tons (or 12.7%) was the result of food waste. For businesses and individual consumers, the cost to landfill was approximately $1.3 billion. Landfill contents are either stored in the landfill and generate methane gas, or are incinerated producing greenhouse gas emissions into the atmosphere (Scholz, Eriksson, & Strid, 2014). Ultimately, these are factors called negative externalities, and they affect all consumers (Munesue, Masui, & Fushima, 2015). Buzby & Hyman (2012) stated that while these negative externalities affect all consumers, most consumers are insulated from such realities, which occur because of their shopping, eating, and disposal habits. The researchers further stated that U.S. consumers could be

influenced to become more aware of food waste and its effects through education and discourse (Buzby & Hyman, 2012).

In 2012, Venkat published the results of a groundbreaking study that evaluated the effects of food waste on climate change. The researcher disclosed certain assumptions, including that the food being studied was produced or grown in North America, meat product weights were boneless-equivalent, processing and storage concerns are addressed and factored in to calculations, and that the food mileage (distance to transport) is calculated on average, depending on the type of food (Venkat, 2012). The results of this study indicated that avoidable food waste generates 55 million metric tons of waste annually, which translates to 113 million metric tons of carbon dioxide emissions – with an associated cost of $198 billion. Venkat (2012) noted that more than two-thirds of the emissions occur in the production and processing phases of the food life cycle.

Scholz et al. (2014) studied the embedded emissions in supermarket carbon footprint. This study revealed that food consumption is responsible for 20-30% of greenhouse gas emissions. Some European countries have put into place plans to reduce food waste and its carbon footprint by 20-50% by 2025 (Scholz et al., 2014)

Kummu et al. (2012) and Buzby et al. (2014) agreed, by way of independent studies, that 300 million barrels of oil per year and 25% of fresh water in the United States are part of the food waste equation. Buzby et al. (2014) suggested that the increase in food waste is the result of marketing campaigns, increased food supplies, and prosperity. These researchers went on to further state that the measurements taken to

derive their food waste figures were not based on numbers taken from consumer groups who were aware they were being evaluated, because these consumer groups may under report information relating to consumption and waste (Buzby et al., 2014).

Consumers may under report key statistics relative to food consumption and waste. Given potential under reporting, it is important to review factors that drive such behavior, as well as the factors that drive consumers to report data accurately. Given the private nature of food consumption and waste activities that may go on in a consumer's home and the juxtaposition of the impact such personal food consumption and waste activities have on the environment, there is a desire to break through barriers to glean accurate information in a non-threatening setting (Stefan, van Herpen, Tudoran, & Lahteenmaki, 2013). Most people would reduce waste if they could plan around it and that individual norms include environmentally responsible behaviors (Stefan et al., 2013).

Csutora (2012) stated that there is little research to measure the effect of environmentally responsible behaviors on the ecosystem. In a study of green and brown consumers, there is little difference in their carbon footprints, which suggested that individual positions do not always have a notable positive influence and the lack of a difference may lie in an awareness gap (Csutora, 2012). Even though significant attention has been directed to the environment and sustainability efforts, Csutora (2012) suggested that the positive actions of one average consumer may not be enough to counteract the negative actions of a consumer with greater financial means (which the Stefan et al. (2013) research has shown to increase environmental impact). Succinctly put, the positive actions of an environmentally conscious family in Iceland may not be

enough to counteract the environmentally irresponsible behavior of an American family, so the environment still suffers a net loss. Arguably, without the positive actions of the family in Iceland, the environment would be even worse off; as such, it is better to do something than nothing (Csutora, 2012). These situational dynamics are something that consumers are aware of, and are partly to blame for the gap that exists between knowledge and behavior. For example, a wealthy family may be aware of the environmental impact of air travel yet still decide to take a private plane on a long flight (factoring in convenience and comfort). Csutora (2012) further argued that to promote conservation behaviors consumers need motivation to behave responsibly, and that sometimes that motivation is achieved through education (bridging the awareness gap), and making it 'easy' for consumers to behave responsibly. Consumers have and make many choices and to affect such choices, education is a key factor (Csutora, 2012).

The choices consumers face and make and the associated environmental effects were the center of a study at Michigan State University by Campbell-Arvai in 2011. The two-phase study included one phase, which focused on food choices of MSU students, and the second phase, which explored education as a method of behavioral intervention relative to food choices. Campbell-Arvai (2011) noted that while there appeared to be no statistical relationship between students with pro-environment values and their pro-environment behaviors, this could be a result of the students not making a connection between personal food consumption habits and a negative effect on the environment. Campbell-Arvai (2011) posited that by limiting consumer choices and providing them with 'defaults' would bring about the faster changes in behavior that are needed to stem a

crisis. Providing information alone and letting consumers eventually come to environmentally responsible decisions will result in change over the long term, but possibly only after irreversible damage to the environment occurs (Campbell-Arvai, 2011).

In addition to the choices consumers face, societies also face similar choices on a larger scale. Some societies are at a point now, where decisions must be made on the use of existing agricultural land – should land be used to grow food for people, or grow crops for fuel such as ethanol. Thyberg and Tonjes (2015) argued that this situation is precarious and that there is a global food shortage that would be exacerbated if food-growing resources were shifted to fuel resources. Shifting of resources enables balance between food needs and fuel needs, however not without significant planning or cost (Thyberg & Tonjes, 2015).

Return to Sustainable Food Supplies

As consumers learn more about farming and food sources, some begin to look deeper at the operations of these farms, some of which are large-scale fully industrialized operations (Kaipia, Dukovska-Popovska, & Loikkanen, 2013). As the amount of resources required to maintain these operations falls under scrutiny, there is some speculation that a return to smaller-scale farming may provide a stopgap against further environmental damage while strengthening communities (Dodds et al., 2014). Alternative food supply systems include agri-food systems diametrically opposed to the industrialized farm set up operated purely for economic purposes and proposes an alternative model based on respect for the environment and socially responsible behavior

(Atallah, Gomez, & Bjorkman, 2014). By connecting food producers with food consumers meet mutual goals; a revenue stream for the producers and quality food for the consumers (Atallah et al., 2014). Farmers can use the farmers' market venue to differentiate their products, or highlight their products, which are unique to a region and are not available in a supermarket (Atallah et al., 2014; Pitts et al., 2014). Atallah et al. (2014) posited that local food systems are beneficial for communities, especially those communities that operate farmers' markets. Farmers' markets provide a retail outlet for locally grown food and can revive stagnant downtown areas through increased foot traffic, in addition to reducing food miles and fossil fuel consumption (Atallah et al., 2014).

As discussed early in this literature review, early human societies held an intimate relationship with food supplies, now a transformed relationship due to the industrial revolution and the rise of supermarkets. Most consumers no longer know the grower or harvester of their food supplies, but that appears to be transitioning (Abello, Palma, Waller, & Anderson, 2014; Atallah et al., 2014). The implication is that local farms, and by extension, farmers' markets are a local lifeline to prosperity and health for community residents (Atallah et al., 2014).

Some consumers were willing to pay more for an item because the perception of quality is better (Muhammad et al., 2015). As the consumer is able to buy better quality items, the consumer tends to buy less as the need to purchase a slight overage due to cover poor quality is negated – thereby providing a local farmer with revenue, a consumer with quality food, and reducing food waste (Muhammad et al., 2015).

Muhammad et al. (2015) posited that some consumers were willing to pay more for locally grown produce and were more concerned with the origin of the foods they eat. While consumers may be willing to pay more for merchandise deemed safe and of quality, consumers still have some reservations about shopping at farmers' markets, one such concern being methods of payment accepted (cash only in some cases), and inconsistent supply (Abello et al., 2014; Pitts et al., 2014). Consumers also cited the hours of a farmers' market and the physical location were often barriers to shopping, as well as the fact that 'one-stop-shopping' is not available at a farmers' market (Abello et al., 2014).

Inventory and Marketing Techniques for Perishable Foods

Referring to post-harvest losses in affluent countries better knowledge transfer and relationships between food producers and food marketers are part of the solution space for increasing efficiencies and reducing losses of perishable foods (Avinadav, Herbon, & Spiegel, 2013; Ketzenberg et al., 2015). Also critical to improved operations and loss reductions is effective inventory management (Avinadav et al., 2013; Ketzenberg et al., 2015). Grocery store managers are not necessarily aware of the amount of waste generated in their department and it is possible that supermarket managers grossly underestimated the amount of waste generated and lacked any clear strategy for identifying or reducing food waste (Garrone et al., 2014; Thyberg & Tonjes, 2015). One observes goals in the ways that they influence the inventory buying and shelf stocking decisions of supermarket managers, as well as food display and sale planning (Garrone et al., 2014; Thyberg & Tonjes, 2015). As supermarket managers design

displays and plan sales, incorporating Maslow's hierarchy of needs plays an important role in marketing to the consumer (Feldmann & Hamm, 2014). The need for food is a basic physiological need and food purchasing and consumption is a common mechanism to meet that need (Feldmann & Hamm, 2014; Maslow, 1968). In order to improve the management of perishable food inventories, supermarket managers need to understand the basic needs that drive consumer purchasing decisions and then develop appropriate marketing practices schemes. Supermarket managers play a role here as marketing strategies evolve. Feldmann and Hamm (2014) posited that the means by which a consumer fulfills a need are substitutable and that alternatives are acceptable, presenting a valid marketing opportunity for perishable food inventories.

The number and perceived quality of available strategic choices effects goal setting and attainment (Kopetz, Kruglanski, Arens, Etkin, & Johnson, 2012). There are various strategies available and competing goals play a role in the cognitive effect of goal systems theory (Kopetz et al, 2012). Examples of competing goals may be product variety increases and inventory reduction, the former being driven by consumer preferences, the latter by supermarket management (Cleary & Lopez, 2014). As this study will explore, factors that influence marketing plans are key to determining better strategies for marketing perishable foods (Cohen, Collins, Hunter, Ghosh-Dastidar, & Dubowitz, 2015). Employing an evolutionary versus static philosophy to developing a department marketing plan enables business practices that adapt to changing consumer preferences, thusly moving perishable inventory and meeting the business goals of the

supermarket through revenue generation and basic needs satisfaction (Buzby et al, 2014; Kopetz et al., 2012).

As supermarkets expand and grow to satisfy an increasingly specialized consumer palette, new product additions to inventories meet this demand (Ketzenberg et al., 2015). Technologies, including multiple refrigeration units are helping to manage perishable inventories and partnerships with firms such as Intel hold promise for more intimate customer relationships (Kumar, Umashankar, & Park, 2014). A significant challenge is managing inventories, especially those with a shorter shelf life (Kumar et al., 2014); and compounding the problem is the different strategies used by managers at stores across the same chain (van Donselaar & Broekmeulen, 2012). Common perishable food inventory management strategies employed by supermarkets include limiting the assortment, or limiting the quantity of a particular item – both strategies can work against the goals of increased revenue and increased customer satisfaction (Duan & Liao, 2013; van Donselaar & Broekmeulen, 2012).

There is a significant amount of research available on the subject of managing perishable inventories. One challenging area of managing such inventories is balancing the right inventory levels against the budget for outdating (van Donselaar & Broekmeulen, 2012). Solutions to this challenge include increasing product shelf life through packaging modification or increasing sales of perishable products (van Donselaar & Broekmeulen, 2012). Another challenge is the sourcing of perishable food items to satisfy year round consumer demand. Global sourcing is now a strategy employed by retailers and adds a layer of complexity to inventory management and the shelf life issue

(Amorim, Gunther, & Almada-Lobo, 2012; Rijpkema, Rossi, & van der Vorst, 2013). The researchers posited that stores lack effective food waste reduction strategies in the face of so many supply chain variables (Rijpkema et al., 2013). To reduce the loss of store profitability, leaders recommend that planning occur to mitigate shelf-life issues and build these factors into pricing of perishable food items (Rijpkema et al., 2013). Transportation is also an area that presents a challenge when managing perishable food inventories sourced globally (Gumasta, Chan, & Wiwari, 2012). Perishable products begin the downward phase of their life cycle as soon as harvested and must be transported in as fast a way as possible, under optimum circumstances, in order to be saleable upon delivery to the retailer (Gumasta et al., 2012). Clearly, outdating, global sourcing, shelf life, and transportation are significant challenges that retailers of perishable food products must respond to, and it is clear from the literature that retailers lack such strategies to manage the food waste issue (Buzby et al., 2014; Thyberg & Tonjes, 2015).

Typically, the focus of Good Samaritan laws is to provide members of the medical community with immunity from civil liability in the event emergency aid is offered (Brandt, 1984). Michigan has several Good Samaritan laws, including one statute specifically designed to protect food retailers who in good faith donate to qualifying organizations. Michigan Act 136 of 1993 "Immunity of Food Donors from Civil Liability" is comprehensive and provides food retailers a broad spectrum of protection (Legislative Council of the State of Michigan, 2015). Furthermore, The Bill Emerson Good Samaritan Food Donation Act, signed into law in 1996 by President Clinton

provides Federal protection beyond any state mandates (Schneider, 2012) and the Good Samaritan Tax Act offers certain tax incentives for businesses engaged in food recovery operations (Wie & Giebler, 2013). What is not clear is whether food retailers are educated as to the provisions of the various Acts or are knowledgeable about food recovery programs (Wie & Giebler, 2013). At the heart of a phenomenological research design is the tenet to explore a new phenomenon outside what is known as *business as usual* by studying the lived experiences of individuals close to subject. The desire to explore the familiarity of supermarket perishable food department managers with the provisions of Good Samaritan laws, among other factors, is core to the research question.

Transition and Summary

What is important to take away thus far is that there is an issue with food waste, in which behaviors of food producers, sellers, and consumers play a part (Ketzenberg et al., 2015). Clearly, some supermarket managers lack a common experience of effective strategies to reduce perishable food waste through a Good Samaritan Food Donation act. Therefore, solution space is two-fold. One, supermarket managers can improve store and department profitability by selling more perishable foods, so clearly improved strategies are positive for the business and the environment (Buzby et al., 2014; Venkat, 2012). Two, it is important for the supermarket manager to deliver improved perishable food marketing solutions in such a fashion as to make it personal and individual for the consumer (Chung & Li, 2013). In Section 2, I will explore the role of the researcher in direct interaction with the participant group and the methodology and design employed to conduct the study.

Section 2: The Project

In Section 1 of the proposed study, I discussed what perishable food waste is, the upstream and downstream effects of perishable food waste, as well as understanding any existing published strategies on dealing with the perishable food waste issue. Section 2 will cover the framework and the technical aspects that support the proposed study. The purpose statement and role of the researcher are included, as well as the information provided on the proposed participant population. I cover in detail the research method and design. Data collection, organization, and analysis technique are included, as well as the reliability and validity of the proposed study.

Purpose Statement

The purpose of the proposed qualitative phenomenological study is to explore the lived experiences of supermarket managers who reduce food waste through a Good Samaritan Food Donation Act. Twenty supermarket managers will participate in phenomenological long interviews, to share their lived experiences of a common phenomenon. This population group and scope are manageable within the confines of the proposed study. The geographic location for this study is Midland, Michigan. Through better business practice and further insight into consumer food selection behaviors, food producers and retailers may better manage inventory and reduce waste (Garrone et al., 2014). Implications for social change are in the downstream effects of better business practices including reduced perishable food waste, which could lead to insight for supermarket managers on how more effectively manage perishable food inventories.

Role of the Researcher

In a qualitative study method, I am the data collection instrument. My role in this project is of research collector, conversation facilitator, and educator. The body of knowledge in this field suggested that food waste is a problem (Buzby et al., 2014; Venkat, 2012) and, in order to understand the factors that contribute to food waste, I will conduct additional research at the supermarket level to explore the phenomenon. Twenty supermarket managers will participate in phenomenological long interviews that could lead to insights as to why perishable food is wasted. Van Manen (2014) suggested that it is important to guide an interview through an engaged approach but to take care not to direct the participants thought process. Through the phenomenological long interview, I will connect with supermarket managers and share information with them. The interview protocol consists of a series of questions to thoroughly explore the participant's experiences with the research question (Englander, 2012; Jacob & Furgerson, 2012), see Appendix B. Through this approach and including any necessary follow up questions, it was possible to identify strategic gaps in processes and procedures. It is also my responsibility to conduct the research ethically in accordance with the Belmont report, and protect participant identities.

I do not work in the grocery industry and have no professional experience that may influence the research results. However, I do have more than 20 years' experience as the primary grocery shopper in my household and I will need to make sure to mitigate any personal bias that may occur from that experience. Additionally, I have feelings relative to sustainable food supplies and, as the researcher, it is my responsibility to

ensure that the data collected are reliable and valid and this responsibility includes mitigating bias (Van Manen, 2014).

Participants

The participants in the proposed study are a group of 20 perishable food department managers in the Midland, Michigan area, a small city in the central-eastern part of the state. The sample size is small enough to enable data collection and analysis in a reasonable timeframe, yet large enough to provide breadth and depth to the research (Bullis, 2012; Marshall & Rossman, 2016). The population is comprised of a mix of rural and urban dwellers. I work for a global firm and have access to supermarket management personnel through my community connections.

The ideal participant is a supermarket manager with the lived experience of reducing food waste through a Good Samaritan Food Donation Act (Englander, 2012). Participation in the study is voluntary and a participant may decline to participate at any time during the research and collection of project data. In an effort to select the most qualified participants, I will not interview those who are not department managers, but only those participants who indicate these activities are their primary responsibility.

In-person interviews are the main component of the strategy for data collection, as is necessary in a phenomenological study (Van Manen, 2014). To protect the identity of project participants, I will change participant names in the published research results and keep the reference list for 5 years in a password-protected file and stored on an encrypted drive. Interview locations will vary, but such locations were of the preference of the participant. Given the topic, participants felt comfortable conducting a discussion in an

open setting. Pursuant with project requirements, original interview questions, transcripts of recorded interviews, and the list of pseudonyms are kept for the prescribed period in a locked file cabinet in my office. I will store files containing the original recordings of the interviews and any other electronic files on a portable hard drive that is password protected for 5 years. After 5 years the data are permanently destroyed.

Research Method and Design

The proposed study is qualitative in method and phenomenological in design. This combination of method and design allow for a customized structural framework in what could otherwise be a rigid and data driven study. Moustakas (1994) affirmed that the qualitative approach is appropriate for exploring and capturing the lived experiences of participants. While a quantitative approach of analyzing existing data may produce a work contributory to the body of knowledge, this method does not explore the root causes of the food waste phenomenon. Additionally, a quantitative approach utilizing a survey with categorized responses may provide data, but would fail to capture the lived experiences (Husserl, 1962). In order to understand the data driven statistics, research into the lived experiences of perishable food department managers through phenomenological long interviews will capture the perspective of the managers who directly experience the phenomenon. Questions posed to supermarket department managers are open-ended, the result being an analysis of any patterns in the responses shared by the participant population. I could conduct the study with a mixed methods design and may consider such for future expansion of the proposed research.

Specifically, the purpose of the proposed qualitative phenomenological study is to explore the lived experiences of supermarket managers who reduce food waste through a Good Samaritan Food Donation Act. Twenty supermarket managers will participate in phenomenological long interviews, to share their lived experiences of a common phenomenon (Englander, 2012). This population group and scope are manageable within the confines of the proposed study. The geographic location for this study is Midland, Michigan. Through better business practice and further insight into consumer food selection behaviors, food producers and retailers may better manage inventory and reduce waste (Garrone et al., 2014). Implications for social change are in the downstream effects of better business practices including reduced perishable food waste, which could lead to insight for supermarket managers on how more effectively manage perishable food inventories.

Method

The qualitative research method allows for exploration (Yin, 2014) and I selected it for this study. The qualitative method allows for the use of open-ended questions and exploration into participant values and experiences that may drive related behaviors (Van Manen, 2014; Englander, 2012). Use of the quantitative method would result in data collection but would lack the context, values, or personal interpretations that contribute to the food waste phenomenon. A qualitative study will contribute to the greater body of knowledge and complement the quantitative studies conducted on this topic. A mixed methods approach may have been appropriate but was not feasible due to time constraints.

Research Design

A qualitative study offers many research designs from which to choose, including phenomenology, ethnography, and case study research (Van Manen, 2014). Ethnography involves the study of a particular culture and although in a general sense, supermarket managers could be considered a culture; this design did not seem the most appropriate for the research objectives or participant population (Yin, 2014). A case study design may have been appropriate but case studies can be time consuming which may have resulted in participant dropout and as such, this design was not selected (Van Manen, 2014). The research design selected should be the best vehicle with which to display the research question and often the differences in the methods drive the selection, versus the commonalities (Van Manen, 2014; Yin, 2014). Given that I have a desire to understand the lived experiences of supermarket managers relative to the phenomenon of food waste and the Good Samaritan Food Donation Act, the phenomenological design is the chosen design. The best way to understand a phenomenon is to experience it or share the experience with one whom has experienced the phenomenon directly (Husserl, 1962; Englander, 2012). Analysis of the data collected, in this case the content of the interviews, enables discovery of the reality of the situation or the reasons for the experiences.

While the case study design would have illustrated the knowledge and strategies of one such manager, phenomenology allows me to explore the phenomenon in a broader sense, yet is manageable within my personal time constraints. Additionally, with a phenomenological design, I will be better able to look for patterns in the data. The data is

saturated when redundancies occur with the emergence of common themes from the interviews and no new data points are presented (Van Manen, 2014).

Population and Sampling

Execution of the proposed study will require purposeful sampling in order to select participants who are knowledgeable on the subject matter (Van Manen, 2014), having had lived experiences with the Good Samaritan Food Donation Act. Relative to sampling strategies, multiple approaches are considered, including maximum variation, criterion, and opportunistic. Van Manen (2014) indicated that multiple sampling strategies may be utilized in a single study, thereby maximizing perspectives and variations in responses. Criterion sampling will be most critical to the proposed study, given that each participant must meet certain criteria to participate, including being the responsible party in the household for grocery shopping, as well as being involved in meal cleanup activities.

Yin (2014) indicated that, typically, phenomenological studies amass between 1 and 10 individuals, but I will be deviating from this model slightly by interviewing 17 participants. The reason for this is to comply with Walden University research requirements and to maximize the experiences collected for analysis and to allow patterns to emerge, which Yin (2014) indicated is key to a maximum variation sampling strategy. One of the cornerstones of a phenomenological study is to record and explore the lived experiences of study participants, and this is accomplished in the proposed study through multiple interviews with each participant, which is essential (Yin, 2014; Englander,

2012). Moustakas (1994) indicated that a smaller sample size is appropriate to understand the lived experiences of the participants.

I will select 17 adult participants without preference to race or gender, and by selecting participants without subset classifications, resulting in a more diverse population sample. This is not to say that if certain patterns emerge among participants that I will not discuss them, rather, the basis for the proposed study is a macro (not micro) approach to the intended population sample. Criteria for inclusion in the proposed study include that the participant must be a supermarket department manager with a lived experience of reducing food waste through a Good Samaritan Food Donation Act. As such, adult participants are required, but in order to maximize the experiences collected, adult participants from multiple age groups are considered. When redundancies in the data emerge, the data is saturated (Van Manen, 2014).

Ethical Research

In accordance with the terms of the Belmont Report, respect for participants and application of basic ethical principles are given the highest priority in the conduction of this research (Belmont Report, 1979). Participation in this study is voluntary and participants agreeing to participate and sign an informed consent agreement. The informed consent process includes providing participants with a description of the study, including the study purpose and risks and benefits of participation (Ahern, 2012; Belmont Report,). The process also involves explaining who I am, my background, and my role as the researcher. I will not offer incentives or payment for participation. I will provide study procedures, including the estimated time required. Participants may withdraw from

the study at any time without penalty by simply sending an email indicating their request to withdraw. Participant identities are masked and every measure taken to protect the privacy of individuals willing to give their time to this study. The Walden IRB approval number for this study is 06-23-16-0302944. I will store study data in a locked cabinet for 5 years to protect the confidentiality and rights of participants. After 5 years, I will shred any hard copies of data using a standard electric cross-cut shredder and destroy electronic data using Cybershredder software.

Data Collection Instruments

Various data collection instruments are available for a qualitative study, including interviews in a variety of formats (Cairney & St Denny, 2015). In a qualitative study, the researcher is the primary data collection instrument (Englander, 2012; Marshall & Rossman, 2016). I prepared an overarching research question that serves as the interview question and it is designed to elicit open-ended responses to gain understanding of the lived experiences of the subject population as demonstrated by Englander (2012). The interview protocol, available in Appendix A, contains a list of questions designed to thoroughly explore the lived experiences of supermarket managers. Furthermore, it is important to note that in a phenomenological long interview, the attempt at understanding is focused on the phenomenon whilst recognizing that a conversation with a human is required to gain said understanding (Englander, 2012).

I designed the interview question to facilitate delivery of information from the participant's perspective and describe their behaviors and lived experiences with food waste and the Good Samaritan Food Donation Act as it relates to their role as a

supermarket department manager. The interview question evolved from key themes uncovered during the literature review and background research. Thyberg and Tonjes (2015) indicated that consumers may not be aware of the consequences of their eating and shopping habits, and existing strategies employed by supermarket perishable food department managers are unclear, so further research is needed to determine if there are strategic gaps that may be addressed. Additionally, the term *food waste* may have mixed meanings to participants through their personal or professional lens so it is important to get their perspective before applying a definition so as not to introduce bias in their responses. Bloom (2006) suggested that individuals may not answer interview questions about their personal behavior accurately out of fear of embarrassment, so it will be important to keep the tone neutral yet inquisitive. Buzby et al. (2014) posited that individual insulation to the negative externalities of their behaviors is a factor and, as such, it is critical to the project to tie supermarket strategies to the overall food waste problem. Flexibility is important with respect to participants and the interview protocol, especially if additional information presents that warrants additional deeper or additional discussion (Brown et al., 2013).

At this point, I will have a general idea of what the participant thinks food waste is, how the participant incorporates food waste reduction ideas into department level strategy, and their experiences with the Good Samaritan Food Donation Act. I will review interview transcript to ensure that the interview content remains relative to the study.

Data Collection Technique

Data collection for the proposed study will involve phenomenological long interviews as discussed by Moustakas (1994) and Englader (2012). To facilitate epoche, I will address any existing biases and consider how these biases are handled as indicated by Moustakas (1994). Epoche is the natural, free flow of the lived experience without the interjection of preconceived notions (Van Manen, 2014). Epoche is an integral part of the preparation process for each of the 20 interviews in order to cleanse the mental palette of my personal biases as well as anything introduced in previous interviews with other participants (Moustakas, 1994). However, epoche is not intended to eliminate bias, only mitigate its effects on the study in consideration (Moustakas, 1994).

I conducted the study interviews face to face. I developed the interview question to pose an inquiry that will elicit open-ended responses that are necessary in a qualitative, phenomenological study as discussed by Van Manen (2014) and Englander (2012). The advantage to face-to-face long interviews is the perspective shared by the participant and the depth of knowledge collected (Moustakas, 1994; Van Manen, 2014). A disadvantage would be the time necessary to conduct the interview as well as transcribe the material; however, as Van Manen (2014) stated, it is a best practice to have a recording of the interview for reference in the event that language presents a barrier. Once an interview has begun, it may become apparent that additional probing questions are needed to fully elicit a participant's feedback (Moustakas, 1994). I will highlight these situations in the study results and make full details available in the transcript.

I conducted the interviews in a location of the participant's choosing; the intent is to make the participant as comfortable as possible as pointed out by Moustakas (1994) I will verify that the participant has signed the consent form and inquire if there are any procedural questions prior to the interview beginning. The interviews lasted 60 minutes or less, but, in keeping with the fluidity of the long interview, I allowed as much time as needed by the participants. I took notes during the interview on a copy of the interview protocol coded for that participant and incorporated these notes into the transcript.

The phenomenological interview question was designed to allow the participant to freely answer and not simply answer 'yes' or 'no', which would not elicit the experiences I intend to capture. Such questions should not elicit a simple yes or no response (Van Manen, 2014). The interview question allowed me to lead the participants; however, the intent is not to frame their answers to a certain end, but to allow their responses to flow as noted by Van Manen (2014). Some of the responses may be particularly insightful, while others will end up irrelevant and filtered.

I provided the participants with a copy of the interview transcript and follow up to make sure that everything was recorded based on their feedback and that they were comfortable with the results. Member checking is the process of validating data during collection and analysis to verify that one has captured the meaning behind participant responses and this occurs during the interview or through follow up conversations (Harper & Cole, 2012). Clarifications as a result of member checking are included as notes within the transcript document, but the original interview recording was not altered (Harper & Cole, 2012).

Data Organization Technique

Using an interview protocol for each interview which includes adequate space for researcher notes and comments, I recorded each interview using a Sony IC hand held digital voice recorder (model ICD-SX712) and the AudioMemos application for iPhone and transcribed the interviews using the online application oTranscribe. I had planned to use Dragon Naturally Speaking transcription software or the transcription software available within the NVivo application as noted by Franzosi et al. (2013) and Cambra-Fierro and Wilson (2011), but neither solution allowed me to control the recording with keyboard keys which slowed down the transcription process. I coded the transcription audio file of each initial interview and member checking interview, saved it with the participant number for reference, and included any researcher notes or comments written on the interview protocol grid in a corresponding scanned file. Such electronically saved information is password protected to protect the participant as recommended by Marshall and Rossman (2016). For security of the data, I (a) saved all electronic files in a research folder with subfolders for participant level files, (b) stored any printed materials in a data safe, which is equipped with an electronic pin code, (c) will store study data and materials for 5 years, or as long as are necessary to reproduce the study or expand a future study, and (d) at the time of disposition, I will shred paper files and delete electronic files.

Data Analysis Technique

The primary outcome of the study is an interpretation of participant responses. There are no numerically pointed or defined responses with which to conduct statistical

analyses; however, there are themes in the responses as Van Manen (2014) described. While one cannot predict an individual participant's responses, there is evidence in the literature that there is a general problem with how much food was wasted (Blondin, Djang, Metayer, Anzman-Frasca, & Economos, 2014). I looked for responses that indicated there was food waste activity, that there was some attempt by the participant to understand the implications of said response, and gathered responses regarding the lived experience with the Good Samaritan Food Donation Act. Given the conversational approach to the interviews, one expects responses from some of the participants to some of the questions to be lengthy and this turned out to be a solid prediction; this is important for free flowing conversation and to capture the natural state of the participants lived experience (Englander, 2012; Marshall & Rossman, 2016; Van Manen, 2014).

I summarized the responses from all participants using methodology designed by Van Manen (2014). I employed the following steps of the modified van Kaam procedure to analyze the data: (a) read and listen to the recorded responses thoroughly and make notes, (b) identify the themes that emerge and create labels, (c) identify links between themes, (d) categorize themes from the data, (e) construct a vivid description of participants' experiences, (f) examine the themes and provide clear understanding, and (g) tabulate themes and write up the findings.

Summarized, combined participant responses form a master summary table. I used NVivo software to code the interview data and NVivo worked perfectly for this activity. NVivo enables the researcher to be able to identify patterns and develop themes (Cambra-Fierro & Wilson, 2011; Franzosi et al., 2013). NVivo 11 Pro software is an

analytical tool to enhance transparency during analysis and reduces time spent on analyzing the data (Cambra-Fierro & Wilson, 2011; Franzosi et al., 2013).

Reliability and Validity

The purpose of the qualitative phenomenological study is to explore the lived experiences of supermarket managers who reduce food waste through a Good Samaritan Food Donation Act. The intent of this study is not to convince anyone that there is a problem with food waste, for existing research has already done that. The intent was to explore food waste reduction behaviors through a Good Samaritan Food Donation act and determine if there are any changes in strategy or procedure that could reduce food waste.

A well-supported idea is a valid idea, as such, if a study is well supported through the background research as well as through the results of the interviews; a study is considered valid (McCaslin & Scott, 2003). Utilizing the spirit of Polkinghorne's five-question approach, I enhanced the study validity by: (a) not influencing the participants in such a way as to overshadow their perspectives, (b) providing accurate transcription of the interviews, (c) providing full and in-depth analysis of the interviews, including evaluating alternatives, (d) providing sufficient detail for the reader to draw parallels from the problem and purpose statements through the literature review to the interviews, as well as exhibit flexibility throughout the study so as not to 'paint a specific picture' yet allow the data to reveal the actual situation, and (e) providing sufficient data so as to show that the population sampled could be extrapolated to a larger population should someone decide to repeat the study in the future.

The reliability and validity of a qualitative research project should be measured using appropriate criteria, which are different from that by which quantitative analysis is examined (Anney, 2014). I used member checking with the participant population to address dependability and creditability as described by Harper and Cole (2012). Follow up questions or interviews with participants validated or clarified responses and I noted any such clarifications in the transcript. Reciprocal dialogue and member checking actions lend sensitivity to context (Smith et al., 2012). Smith et al. (2012) supported that thorough and in-depth interviews produce a rigorous result that lends confirmability to a research project. The interview developed for the study will facilitate an in-depth interview, assuring confirmability. Additional criteria that lend validity to a study is transferability, or the ability of a future researcher to duplicate the study (Marshall & Rossman, 2016). As such, I carefully documented data collection and analysis procedures in order for a future researcher to either duplicate the study or expand on it although, transferability is up to the reader. Thorough in-depth interviews utilizing reciprocal dialogue (member checking) should saturate the data (Fusch & Ness, 2015; O'Reilly & Parker, 2012; Smith et al., 2012). Further interviews of this population in this geographic location would not likely reveal additional data beyond any patterns already uncovered in the analysis as discussed by Fusch and Ness (2015).

Transition and Summary

In Section 2, I recapped the purpose statement and discussed the technical aspects of the proposed study including participant selection and my role as research facilitator. Section 2 included the research method and design and the research data collection,

organization and analysis plan. Finally, the section concludes with a discussion of factors that deem the study data reliable and valid.

Section 3 contains the heart of the study, the application to professional practice and implications for change. After a brief review of the study foundation, I presented the findings. This section will also focus on the practical implications of this body of work, including recommendations for action. In my reflections, I discussed any bias that may have inadvertently injected into the work, as well as reflected on the experience and shared any modes of thought or behaviors that this study may have influenced in my own behavior or preconceived notions that were validated or cast aside. Research is dynamic and learning is evolutionary; through the participants and the research process, I gathered information and experiences that added to the existing body of knowledge as well as afforded the opportunity to be an agent for social change.

Section 3: Application to Professional Practice and Implications for Change

This section outlines the study findings in detail. Included in Section 3 are an introduction or overview of the study, presentation of the findings, application to professional practice, implications for social change, recommendations for further action, and recommendations for further study. This section concludes with reflections and summary and conclusion.

Introduction

The purpose of this qualitative phenomenological study was to explore food waste reduction strategies used by supermarket managers under the Good Samaritan Food Donation Act. I collected data through interviews with 17 individuals who have experience managing perishable foods in Midland, Michigan. Of the initial participant pool of 20 participants, three participants declined to participate and were removed from the project. Study participants included perishable department managers and personnel who are involved with donation activities. Participant interviews took place in private rooms of the participant's choosing, allowing for the participant to feel secure in sharing their lived experiences in response to open ended questions.

Participants qualified for inclusion in the study if they were involved in managing perishable foods or in managing food donations or were in supermarket management. Upon completion of the analysis of participant data, it was clear that there are strategies in place to reduce perishable food waste in supermarkets. Successful strategies include in-store repurposing, price reductions, stock rotation, and lastly, donations. These strategies do not include an active goal component of donating food utilizing the

protection provided under the Good Samaritan Food Donation Act. Moreover, most participants were not aware of the Act or the protection it offers at the State and Federal levels.

Presentation of the Findings

The central research question for this study was: What are the lived experiences of supermarket managers who reduce food waste through a donation covered by the Good Samaritan Food Donation Act? The participant population was comprised of personnel from 15 establishments with perishable food departments in Midland, Michigan. Each participant was assigned an ID, beginning with the letter "K", followed by a numeric identifier. Each location was assigned a number and the two fields were concatenated for clarity and referencing. For example, participant ID K5-01 indicates participant number 5 from location 1. The names of the individuals and the store were redacted from the transcripts to protect the confidentiality of the participants. The interviews were conducted in private locations selected by the participant. Each interview lasted no longer than 60 minutes. I transcribed each interview using the online transcription system oTranscribe. As stated in Section 2, I initially intended to use Dragon dictation software to manage the transcriptions, but this software was not fully capable of managing multiple voices and speech patterns in an efficient manner.

Kruglanski et al. (2011) stated in goal systems theory that cognitive resources related to goals may present conflict for individuals, forcing them to make choices between goals or in the methods by which achievement of a goal occurs. Kruglanski et al. (2011) further posited that an individual's cognitive resources constitute a constant sum

game, therefore, thought processes shift to allow completion or end, even with competing priorities. Applying this theory to the study of perishable food waste reduction strategies, it is clear that individuals develop strategies to reduce perishable food waste, either through management motivation (to increase revenue) or individual desire to contribute to positive social change (feeding the needy or waste reduction). There are certain strategies that are more prevalent or effective, and multiple influencing factors drive completion of the goal of reducing food waste. With respect to the Good Samaritan Food Donation Act, individuals in the participant pool were not knowledgeable about the Act or the protection the Act offers, and therefore the Act is categorically not a factor in goal setting to reduce perishable food waste.

The qualitative data from the interviews was processed using NVivo 11 Pro. Each interview transcript was loaded into the software as a source and coded into nodes. Additionally, field notes and member checking notes were added to the data and coded, which enhanced the reliability of the study and validity of the data (Saldana, 2013). Three themes emerged through the data analysis: knowledge level of the Good Samaritan Food Donation Act, factors that influence food waste or the strategy for managing it, and waste reduction strategies already in place. Table 1 contains information about the data themes.

Table 1

Data Themes

Theme	References	% of References
Knowledge of Good Samaritan Food Donation Act	28	14.29%
Factors that Influence Food Waste / Management Strategy	83	42.34%
Existing Food Waste Reduction Strategies	85	43.37%
Total	196	100.00%

Emergent Theme 1: Knowledge of the Good Samaritan Food Donation Act

The analysis of the data supporting the first theme revealed that the Good Samaritan Food Donation Act and the protection it offers retailers at the state and federal levels is not known to most store personnel in the participant population (see Table 2). Three of the participants interviewed possessed a general awareness of the Act and were familiar with the Act on some level. Two participants specifically stated upon hearing the name of the Act that they assumed it was the Good Samaritan Act that protects an individual from a lawsuit after helping someone during an emergency. Four participants specifically stated that they would have donated more or altered their donation strategy, had they known that the Act provides some legal protection from criminal liability. Some retailers fear liability, have no knowledge of, or do not understand the protection offered under the Act, and as such the Act remains poorly applied in retail food settings (Block et al., 2016). Supermarket managers face competing priorities, including the desire to donate more food, but also the goal of increasing revenue through product sales. Some managers see these goals at odds, or aren't sure how to accomplish both. Goal systems theory tells us that goals that seem at odds create conflict for the individual but if the expectation by leadership is that a manager will reduce food waste and increase revenue, the expectation and path to resolution is resolved for the manager, by the inclusion of both goals (Kruglanski et al., 2011). Reducing food waste may be a path to increased revenue, for retailers, food waste reduction could be a revenue growth strategy.

Table 2

Theme 1: Knowledge of the Good Samaritan Food Donation Act

Node Description	*n*	*n* as a % of theme
No Knowledge	12	70.59%
General Awareness	3	17.65%
Confusion with Another Good Samaritan Act	2	11.76%
Total	17	100.00%

Note. *n* = frequency

Emergent Theme 2: Factors that Influence Food Waste and Management Strategy

The second theme that emerged from the data analysis is that there are specific factors that the participants identified as influential to the phenomenon of food waste or for how food waste is managed. Those influencing factors included sell-by dates, food handling regulations, what constitutes edible or inedible food, and the participant's personal thoughts or bias related to perishable food waste. With all of these variables affecting the seemingly conflicting goals of reducing food waste and increasing profits, supermarket managers have a difficult time determining goal priority and thusly preparing a strategy for goal attainment. At the core of the dilemma is which variable is the motivation for decision making, which is, in theory, the basis of goal achievement (Kruglanski et al., 2011).

Food handling regulations affect food donations and retailers are concerned that they may be held liable for donated food if the recipient does not handle it correctly (Chapnick, Barnidge, Sawicki, & Elliott, 2017). Some retailers prefer to work with organizations such as Hidden Harvest, because Hidden Harvest has refrigerated trucks and is able to properly handle donated food. Participant K19-06 posited that a common-sense approach should be taken to handling food and that regulations are not truly

needed. Participant K19-06 stated that food handling regulations passed down from their corporate headquarters are a barrier to donating some edible food because some local food kitchens are not certified kitchens and lack the facilities to properly handle food as determined by their corporate headquarters. Participant K19-06 further commented that the short journey across town from refrigerator to refrigerator in a cooler should be more than sufficient to safely transport deli sandwiches. Participant K06-08 commented that storage and transportation of produce and other perishables is a problem – that more could be donated if there were a more coordinated solution for food pantries and soup kitchens.

Retailers possess a clear sense of what constitutes edible or inedible food. Buzby et al., (2014) stated that food waste is food that is lost or wasted that was destined for human consumption. All participants noted taking a common-sense approach to what foods are able to be donated or repurposed because they are still edible, and which foods need to be thrown away because they are beyond use. Inedible food is something that has obviously gone bad, that smells or has visible rot stated that some produce is still good to eat, even if it doesn't look as appealing as something freshly picked. Additionally, two participants commented that this is a factor with consumers as well – that they don't want to buy something that doesn't look perfect (Aschemann-Witzel, Haagen-Jensen, Hyldetoft-Jensen, & Kulikovskaja, 2017).

An area of growing interest to consumers, which is driving adoption at the retail level is organic food. However, the nature of organic food is that it is not treated with preservative chemicals, so it does not look as good for as long as produce which is not

organic and consumers may overlook these items in favor of a more cosmetically appealing item (Block et al., 2016). This is a specific example of participant efforts to try to meet a consumer need, yet consumer preferences are a barrier to a 0-waste business model.

Participants are also affected by the food that they see thrown away that could be donated, particularly food that is still edible but has passed its sell-by date and can no longer be sold. Two participants commented that the food thrown away in the deli and bakery in a single day could have fed their families for several days – and saved them a great deal of money on their grocery bill. Food pantry managers need the kinds of foods that are sold in the deli and baker, but there is an inherent conflict that arises from the need for fresh foods and the number of clients that can be served before the perishables expire or are inedible (Chapnick et al., 2017).

The most significant trend relative to this theme is sell-by dates. Sell-by dates are also known as expiration dates, and manufacturers have shortened them in recent years. All participants agree that there is confusion at the consumer level as to what this date, stamped on nearly every sellable product, actually means. There is no common practice or criteria among manufacturers in establishing the dates, which adds to the confusion (Eriksson, Strid, & Hansson, 2016; Hall-Phillips & Shah, 2016; Tiwari, 2016). Depending on the type of product, retailers may be prohibited from selling a product that has passed its expiration date, even if the product appears to be edible food. One such example is fresh whole eggs. Each carton of eggs is stamped with an expiration date, but it's really a quality date. However, the eggs may be perfectly good to eat well past the

expiration date if stored properly, they simply lose a little nutritional value. There is a market for suboptimal products, but little is known as to the actual consumption of these products if purchased (Aschemann-Witzel et al., 2017). Table 3 contains information related to factors that influence food waste and management strategy.

Table 3

Theme 2: Factors that Influence Food Waste and Management Strategy

Themes	*n*	*n* as a % of theme
Food Handling Regulations	9	10.84%
Edible vs. Inedible Food	15	18.07%
Personal Bias / Experience	24	28.92%
Sell-by Dates	35	42.17%
Total	83	100.00%

Note. *n* = frequency

Emergent Theme 3: Existing Food Waste Reduction Strategies

The third theme uncovered through the data analysis was that there are effective waste reduction strategies already in place in supermarkets of all sizes, and one such strategy is food donations. Although the Good Samaritan Food Donation Act is not a factor in these strategy decisions at the tactical management level, donating food in some capacity is a strategy employed by supermarket management (Block et al., 2016). Additional strategies included: animal welfare, in-store repurposing, stock rotation, and price reductions. While these non-donation strategies are effective, they do not apply, specifically, the protection offered by the Good Samaritan Food Donation Act. These non-donation strategies help supermarket managers achieve their goals, through the interconnectedness of the individual strategies – these strategies offer several means to

the end goal. This is the concept of equifinality, or the issue of choice among the available means (Kruglanski et al., 2011).

A strategy used by two participants was a bit of a surprise. Inedible food is donated or sold at a serious discount to animal farms for use as food, and this is a fairly common practice, with pig food being the primary use of food deemed inedible for humans (Salemdeeb, Ermgassen, Kim, Balmford, & Al-Tabbaa, 2017). One participant sells produce that is inedible for humans to a local pig farmer, who supplements his swine's diet with the produce. Another participant sells leftover grind (from meat trimmings) to the Saginaw zoo as food for their carnivores. During busy times such as Christmas, sales of rib roasts and beef tenderloin increase. The quantity of meat trimmings is more than they can sell to the Zoo at one time, so they freeze the grinds for sale later.

In-store repurposing or in-store processing is another strategy used by retailers. In-store repurposing involves taking an item that cannot be sold as is and incorporating it into another item, such as taking an orange and making "fresh-squeezed" orange juice, or taking a freshly cooked rotisserie chicken that has a sell-by date and using it in a salad (Gruber, Holweg, & Teller, 2016). After the sell-by date the whole rotisserie chicken cannot be sold, but it can be skinned and carved to be repurposed as chicken salad. Additionally, this participant will take steaks that have aged and turned dark. This is actually a better steak, but is visibly unappealing to consumers, so this is turned into ground meat and sold. The deli counter at a large, regional chain will take deli meats that have been sliced for display in the case but remain sold at the end of the day and either

discount them in a bargain case, or repurpose them in a salad sold in the deli case, thereby extending the use and revenue potential of the product. There are some restrictions on retailers in this space, such as the ability to convert fruit to juice and repackage it for sale (Gruber, Holweg, & Teller, 2016).

Stock rotation is another common strategy used by retailers to reduce waste. Old stock is moved to the front before it expires, and newer inventory is placed in the back (Eriksson, Strid, & Hansson, 2016). This can be difficult to manage as product arrives on trucks is not necessarily in order of expiration date, so this is something managed by staff in the walk-in coolers and in display cases. This is the case for perishable foods and canned goods. Research has shown that a reduction in storage temperature reduces waste for meats , but is less effective for dairy and cheese, as the costs outweigh the benefits (Eriksson et al., 2016).

Price reduction (mark down) is an effective strategy that retailers use to move inventory that is about to expire (Gruber et al., 2016; Aschemann-Witzel et al., 2017). Price reductions are usually the last attempt to sell a product before donation. Some stores allow employees to purchase the reduced-price items when their shift is over. One retailer offers a .25/pound produce box – a food pantry or soup kitchen purchase all the expiring produce it can fit in the box for the reduced price per pound. Selling perishable foods that are about to expire benefits the retailer and the food banks – food banks will pass along the savings to food pantries by selling products to them at a significantly reduced cost (Chapnick et al., 2017).

After every attempt is made to sell product, a retailer will turn to donations as a mechanism to avoid food waste. If an item remains unsold, but is edible, it is a candidate for donation. Many retailers choose to donate through a food recover organization such as Hidden Harvest (Block et al., 2016). Donating food comes with certain handling restrictions, which can be a barrier to donating if the receiving organization is not equipped as a certified kitchen or does not have suitable transportation (Chapnick et al., 2017). Retailers are aware of the surplus of canned goods that food pantries manage and are also aware of the shortfall of fresh produce or meat (Chapnick et al., 2017). For some retailers, it is simply easier and more cost effective to throw away perishable items rather than donating them. Supermarket managers need the autonomy to make decisions that impact their departments, including what and how to donate (Gravlee et al., 2015). In order to manage a donation or reclamation program, a store needs to assign resources and this can be difficult when operational budgets are slim. Retailers also acknowledge the potential liability issue as a barrier to donating more food. Table 4 contains information related to strategies about food waste reduction.

Table 4

Theme 3: Existing Food Waste Reduction Strategies

Themes	*n*	*n* as a % of theme
Animal Welfare (inedible food)	2	2.35%
In-Store Repurposing	6	7.06%
Stock Rotation	10	11.76%
Price Reductions	14	16.47%
Donations (of edible food)	53	62.35%
Total	85	100.00%

Note. *n* = frequency

Applications to Professional Practice

Three themes emerged from the data analysis, first that there is an opportunity to increase awareness of the Good Samaritan Food Donation Act among perishable department managers, if the Act is going to be used as a factor in setting goals with respect to food waste reduction strategies. Possibly, with increased awareness of the protection the Act offers, stores may be able to improve profitability and generate goodwill in the process (van Donselaar & Broekmeulen, 2012; Block et al., 2016). Improved profitability may be achieved by incurring additional tax write-offs (reducing taxable income) or by increasing revenues through additional product sold or even additional product sold at a discount to organizations that serve the food insecure population (Chapnick et al., 2017; Rinier & Curatola, 2016). For retailers, food waste reduction is a profit-increase strategy.

Supermarket managers are aware of several factors that influence perishable food waste and management strategy in their stores (Gruber et al., 2016). Factors such as food handling regulations and sell-by dates may be beyond their immediate control to modify,

but factors such as their own response to personal experiences and edible/inedible food may be in their control. Managers will need to reconcile their personal beliefs with what is best for the business and society and perhaps take additional actions to resolve any conflict.

The study findings also revealed that there are effective strategies in place for reducing food waste, but the question remains, is it enough? It was clear from the data that smaller, local retailers are more effective at reducing waste to closer to a 0 level, simply because they are small business owners and their living is directly tied to business performance. Managers at larger regional and national chains, however, do not possess as much of an "owner" mindset. It is possible that these retailers could benefit if the department managers had more of a personal interest in maximizing profitability.

Implications for Social Change

The study findings indicate that there is edible food that is wasted. This results in lost profits for businesses, roughly $450,000 annually (Ketzenberg, Bloemhof, & Gaukler, 2015). Additionally, throwing away edible food does nothing to address the needs of the food insecure population. Supermarket leaders could partner more closely with organizations like Hidden Harvest to increase donations, rather than throwing food away (Block et al., 2016). It is possible that additional jobs could be created as supermarkets allocate resources to managing donations and manufacturer reclamations. Participants associated with regional or national chains felt that their organizations could do more in terms of donations and often leaned on the liability issue as a barrier. There is an opportunity for increased education, which could lead to individuals leveraging their

experience to enhance change in their communities (Block et al., 2016). Finally, the study findings may contribute to positive social change by reducing food waste, which helps the environment, and feeding the needy, which helps society (Buzby & Hyman, 2012).

Recommendations for Action

Supermarkets have some effective strategies in place for reducing food waste, however, it is not clear why retailers do not more proactively apply the protection provided by the Good Samaritan Food Donation Act – and if they do, it is not obvious to department managers. The purpose of this qualitative phenomenological study was to explore the food waste reduction strategies in place and covered by the Good Samaritan Food Donation Act. I recommend that supermarket leadership work with their legal departments to explore the Act fully and actively incorporate the Act into their food waste reduction and food donation strategies. I also recommend that department managers push this issue upward in their organizations for additional traction. Supermarket managers and leaders will want to review the findings of this study, as well as food pantries and food collection organizations. Policy makers may want to review the results and consider an online campaign to raise awareness of the protection offered in the legislation. This is an issue which would benefit from national attention, the scope should not be limited to Midland, Michigan.

Recommendations for Further Research

In this qualitative phenomenological study, several limitations were noted, including bias on the part of the researcher and the fact that the research covers a relatively short snap shot in time. Data saturation was reached when 17 participants were

interviewed; no new themes emerged (O'Reilly & Parker, 2012). Recommendations for further research include altering the participant pool to include executive management at these grocery retailers. Given that the participants are responsible for day-to-day operations and are not necessarily policy makers, it is recommended that executive management be consulted as to why employees are not educated about the Good Samaritan Food Donation Act or why liability is still cited by supermarket headquarters as a reason for not donating edible food (Block et al., 2016). A new central research question could be "Why is the Good Samaritan Food Donation Act not a cornerstone of your food waste reduction / food donation strategy?". Additional insights may be uncovered if the timeline were expanded or former and brand-new employees were interviewed. The study results may be disseminated through training sessions for management, a website (or social media such as Facebook) to graphically display the findings, or through conference presence. A retail location is the place where food supply chain fully manifests, and managers, consumers, and food recovery organizations have the potential for interaction, yet there is little research at the retail level of the amount of waste or to examine with scrutiny the waste reduction strategies in place, or to ask the hard questions as to why it is more acceptable to throw food away than to donate it (Gruber et al., 2016).

Reflections

Reflecting on this multi-year journey, I continue to be impressed with the spirit of the individual. Each participant I spoke with had some degree of passion for their work, particularly the local retailers. They put an incredible amount of effort into their

businesses and found the most effective and creative ways of repurposing products in their stores to reduce food waste. Additionally, their food donations come with a personal touch and a sense of community that seemed to be lacking from the national or even regional chains. As one participant commented, her livelihood is on the line, so it makes sense to eliminate waste wherever possible – and to know that her actions benefit her community give her a sense of pride and purpose.

Admittedly, when I began this project, I had little to no awareness of supermarket operations and my assumption was that supermarket managers lacked sufficient strategies to manage food waste to a 0 level. As the research instrument, I managed personal bias and relied heavily on the interview protocol to maintain focus during the interviews as noted by Leedy and Ormrod (2013). Through the sharing of the lived experiences of these individuals, I have changed how I view supermarket operations. Through the interview process, I was able to bring awareness of legislation that may influence some of the participants to modify their food donation strategies. Perhaps this awareness will lead to a reduction or elimination of food waste in supermarket operations.

Summary and Study Conclusions

The purpose of this qualitative phenomenological study was to explore the food waste reduction strategies used by retailers under the protection of the Good Samaritan Food Donation Act. I interviewed 17 participants who work in supermarket perishable foods departments or who are responsible for food donations and analyzed the interview transcripts with NVivo software. Additionally, I methodologically triangulated the data using the interview transcripts, field notes, member checking, and publicly available

company documents. Data saturation was reached when no new themes emerged (Leedy & Ormrod, 2013).

Using NVivo 11 Pro software, I coded and analyzed the data. From this analysis, three themes emerged. The study findings answered the central research question and the topic of the lived experiences of supermarket managers related to food waste reduction strategies under the protection of the Good Samaritan Food Donation Act was fully explored. Moreover, I tied the study findings to goal systems theory, the literature, and the overall body of knowledge. The study findings clearly revealed that supermarket perishable department managers have little to no knowledge of the Good Samaritan Food Donation Act. These managers are aware of factors that influence food waste and management strategy, and they have effective strategies in place to mitigate food waste, but not to a zero level.

References

Abello, F. J., Palma, M. A., Waller, M. L., & Anderson, D. P. (2014). Evaluating the factors influencing the number of visits to farmers' markets. *Journal of Food Products Marketing*, *20*(1), 17-35. doi:10.1080/10454446.2013.807406

Aschemann-Witzel, J., Haagen-Jensen, J., Hyldetoft-Jensen, M., & Kulikovskaja, V. (2017). Consumer behavior towards price-reduced suboptimal foods in the supermarket and the relation to food waste in households. *Appetite, 116*, 246-258. doi:10.1016/j.appet.2017.05.013

Ahern, K. (2012). Informed consent: Are researchers accurately representing risks and benefits? *Scandinavian Journal of Caring Sciences*, *26*, 671-678. doi:10.1111/j.1471-6712.2012.00978.x

Amorim, P., Gunther, H. O., & Almada-Lobo, B. (2012). Multi-objective integrated production and distribution planning of perishable products. *International Journal of Production Economics, 1*(38), 89-101. doi:10.1016/j.ijpe.2012.03.005

Anney, V. (2014). Ensuring the quality of the findings of qualitative research: Looking at trustworthiness criteria. *Journal of Emerging Trends in Educational Research and Policy Studies, 5*, 272-281. Retrieved from http://jeteraps.scholarlinkresearch.com

Atallah, S. S., Gómez, M. I., & Björkman, T. (2014). Localization effects for a fresh vegetable product supply chain: Broccoli in the eastern United States. *Food Policy*, *49*, 151-159. doi:10.1016/j.foodpol.2014.07.005

Avinadav, T., Herbon, A., & Spiegel, U. (2013). Optimal inventory policy for a perishable item with demand function sensitive to price and time. *International Journal of Production Economics*, *144*, 497-506. doi:10.1016/j.ijpe.2013.03.022

Belmont Report, The. (1979). *The Belmont Report: Ethical principles and guidelines for the protection of human subjects of research*. Retrieved from hhs.gov/ohrp/humansubjects/guidance/belmont.html

Billen, G., Barles, S., Chatzimpiros, P., & Garnier, J. (2012). Grain, meat, and vegetables to feed Paris: Where did and do they come from? *Regional Environmental Change, 12,* 325-335. doi:10.1007/s10113-011-0244-7

Block, L. G., Keller, P. A., Vallen, B., Williamson, S., Birau, M. M., Grinstein, A., & Tangari, A. H. (2016). The squander sequence: Understanding food waste at each stage of the consumer decision-making process. *Journal of Public Policy & Marketing*, *35*(2), 292-304. doi:10.1509/jppm.15.132

Blondin, S. A., Djang, H. C., Metayer, N., Anzman-Frasca, S., & Economos, C. D. (2014). It's just so much waste: A qualitative investigation of food waste in a universal free school breakfast program. *Public Health Nutrition*, 1-13. doi:10.1017/S1368980014002948

Bloom, J. (2006). *Dispatches from a wasteful nation: How America squanders its food and leaves its citizens hungry* (Master's thesis). Available from ProQuest Dissertations and Theses database. (UMI No. 1435036)

Brandt, E. (1984). Good Samaritan laws – the legal placebo: A current analysis. *Akron Law Review, 17*, 303-333. Retrieved from http://ideaexchange.uakron.edu/akronlawreview/vol17/iss2/9

Brenes, E. R., Ciravegna, L., & Montoya, D. (2015). Super selectos: Winning the war against multinational retail chains. *Journal of Business Research*, *68*, 216-224. doi:10.1016/j.jbusres.2014.09.030

Brown, D. A., Lamb, M. E., Lewis, C., Pipe, M., Orbach, Y., & Wolfman, M. (2013). The NICHD investigative interview protocol: An analogue study. *Journal of Experimental Psychology: Applied, 19*, 367-382. doi:10.1037/a0035143

Bullis, R. K. (2012). Narrative approaches in psychological autopsies: Suggestions for methodologies and training. *Journal of Forensic Psychology Practice, 12,* 124-146. doi:10.1080/15228932.2012.650075

Buzby, J. C., & Hyman, J. (2012). Total and per capita value of food loss in the United States. *Food Policy*, *37*, 561-570. doi:10.1016/j.foodpol.2012.06.002

Buzby, J. C., Wells, H. F., & Hyman, J. (2014). *The estimated amount, value, and calories of postharvest food losses at the retail and consumer levels in the United States.* U.S. Department of Agriculture, Economic Research Service. Retrieved from www.ers.usda.gov

Cairney, P., & St Denny, E. (2015). Reviews of what is qualitative research and what is qualitative interviewing. *International Journal of Social Research Methodology*: *Theory and Practice*, *18*, 117-125. doi:10.1080/13645579.2014.957434

Cambra-Fierro, J., & Wilson, A. (2011). Qualitative data analysis software: Will it ever

become mainstream? Evidence from Spain. *International Journal of Market Research*, *53*, 17-24. doi:10.2501/IJMR-53-1-017-024

Campbell-Arvai, V. (2011). *Incorporating environmental concerns into decisions about food: Contributions from research on decision-making* (Doctoral dissertation). Retrieved from ProQuest Dissertations & Theses. (UMI 3454533)

Chapnick, M., Barnidge, E., Sawicki, M., & Elliott, M. (2017). Healthy options in food pantries: A qualitative analysis of factors affecting the provision of healthy food items in St. Louis, Missouri. *Journal of Hunger & Environmental Nutrition, 1*, 1-19. doi:10.1080/19320248.2017.1284027

Chun, W., Kruglanski, A. W., Sleeth-Keppler, D., & Friedman, R. S. (2011). Multifinality in implicit choice. *Journal of Personality and Social Psychology*, *101*, 1124-1137. doi:10.1037/a0023778

Chung, J., & Li, D. (2013). The prospective impact of a multi-period pricing strategy on consumer perceptions for perishable foods. *British Food Journal, 115*, 377-393. doi:10.1108/00070701311314200.

Cleary, R. L., & Lopez, R. A. (2014). Supermarket responses to Wal-Mart supercenter expansion: A structural approach. *Empirical Economics*, *47*, 905-925. doi:10.1007/s00181-013-0767-5

Cohen, D. A., Collins, R., Hunter, G., Ghosh-Dastidar, B., & Dubowitz, T. (2015). Store impulse marketing strategies and body mass index. *American Journal of Public Health*, e1-e7. doi:10.2105/AJPH.2014.302220

Cook, J. C. (2014). Potatoes, milk and the Old World population boom. *Journal of Development Economics, 110,* 123-138. doi:10.1016/j.jdeveco.2014.04.009

Csutora, M. (2012). One more awareness gap? The behaviour-impact gap problem. *Journal of Consumer Policy*, *35*(1), 145-163. doi:10.1007/s10603-012-9187-8

Dobrucka, R., Cierpiszewski, R., & Korzeniowski, A. (2015). Intelligent food packaging research and development. *Scientific Journal of Logistics, 11,* 7-14. doi:10.17270/j.log.2015.1.1

Dodds, R., Holmes, M., Arunsopha, V., Chin, N., Le, T., Maung, S., & Shum, M. (2014). Consumer choice and farmers' markets. *Journal of Agricultural and Environmental Ethics*, *27*, 397-416. doi:10.1007/s10806-013-9469-4

Duan, T., & Liao, W. (2013). A new age-based replenishment policy for supply chain inventory optimization of highly perishable products. *International Journal of Production Economics, 1*, 658-671. doi:10.1016/j.ijpe.2013.05.020

Englander, M. (2012). The interview: Data collection in descriptive phenomenological human scientific research. *Journal of Phenomenological Psychology, 43,* 13-35. doi:10.1163/156916212X632943

Eriksson, M., Strid, I., Hansson, P. (2016). Food waste reduction in supermarkets – net costs and benefits of reduced storage temperature. *Resources, Conservation and Recycling, 107,* 73-81. doi:10.1016.j.resconrec.2015.11.022

Farr-Wharton, G., Foth, M., & Choi, J. H. J. (2014). Identifying factors that promote consumer behaviours causing expired domestic food waste. *Journal of Consumer Behaviour*, *13*, 393-402. doi:10.1002/cb.1488

Feldmann, C., & Hamm, U. (2015). Consumers' perceptions and preferences for local food: A review. *Food Quality and Preference*, *40*, 152-164. doi:10.1016/j.foodqual.2014.09.014

Franzosi, R., Doyle, S., MClelland, L., Putnam Rankin, C., & Vicari, S. (2013). Quantitative narrative analysis software options compared: PC-ACE and CAQDAS (ATLAS.ti, MAXqda, and NVivo). *Quality & Quantity, 47*, 3219-3247. doi:10.1007/s11135-012-9714-3

Fusch, P., & Ness, L. (2015). Are we there yet? Data saturation in qualitative research. *The Qualitative Report, 20*, 1408-1416. Retrieved from http://tqr.nova.edu/wp-content/uploads/2015/09/fusch1

Garrone, P., Melacini, M., & Perego, A. (2014). Opening the black box of food waste reduction. *Food Policy*, *46*, 129-139. doi:10.1016/j.foodpol.2014.03.014

Gorissen, P., van Bruggen, J., & Jochems, W. (2013). Methodological triangulation of the students' use of recorded lectures. *International Journal of Learning Technology, 8*(1), 20-40. doi:10.1504/IJLT.2013.052825

Gravlee, C. C., Boston, P. Q., Mitchell, M. M., Schultz, A. F., & Betterley, C. (2014). Food store owners' and managers' perspectives on the food environment: An exploratory mixed-methods study. *BMC Public Health*, *14,* 1-14. doi:10.1186/1471-2458-14-1031

Gruber, V., Holweg, C., & Teller, C. (2016). What a waste! Exploring the human reality of food waste from the store manager's perspective. *Journal of Public Policy & Marketing, 35*(1), 3-25. doi:10.1509/jppm.14.095

Gumasta, K., Chan, F. T. S., & Tiwari, M. K. (2012). An incorporated inventory transport system with two types of customers for multiple perishable goods. *International Journal of Production Economics, 1*, 678-686. doi:10.1016/j.ijpe.2012.06.020

Hall-Phillips, A., & Shah, P. (2016). Unclarity confusion and expiration date labels in the United States: A consumer perspective. *Journal of Retailing and Consumer Services, 35,* 118-126. doi:10.1016/j.jretconser.2016.12.007

Hanner, D., Hosken, D., Olsen, L. M., & Smith, L. K. (2015). Dynamics in a mature industry: Entry, exit, and growth of big-box grocery retailers. *Journal of Economics & Management Strategy, 24*, 22-46. doi:10.1111/jems.12087

Harper, M., & Cole, P. (2012). Member checking: Can benefits be gained similar to group therapy? *The Qualitative Report, 17*(2), 510-517. Retrieved from http://www.nova.edu/ssss/QR/QR17-2/harper

Hickey, M. E., & Ozbay, G. (2014). Food waste in the United States: A contributing factor toward environmental instability. *Frontiers in Environmental Science*, *2*, 51-54. doi:10.3389/fenvs.2014.00051

Husserl, E. (1962). *Ideas: General introduction to pure phenomenology*, Translated by W. R. Boyce Gibson. London, New York: Collier, Macmillan.

Jacob, S. A., & Furgerson, S. (2012). Writing interview protocols and conducting interviews: Tips for students new to the field of qualitative research. *The Qualitative Report, 17*, 1-10. Retrieved from http://www.nova.edu/ssss/QR/QR17/jacob

Kaipia, R., Dukovska-Popovska, I., & Loikkanen, L. (2013). Creating sustainable fresh food supply chains through waste reduction. *International Journal of Physical Distribution and Logistics Management*, *43*, 262-276. doi:10.1108/IJPDLM-11-2011-0200

Ketzenberg, M., Bloemhof, J., & Gaukler, G. (2015), Managing perishables with time and temperature history. *Production and Operations Management, 24*, 54-70. doi:10.1111/poms.12209

Kopetz, C. E., Kruglanski, A. E., Arens, Z. G., Etkin, J., & Johnson, H. M. (2012). The dynamics of consumer behavior: A goal systemic perspective. *Journal of Consumer Psychology*, *22*, 208-223. doi:10.1016/j.jcps.2011.03.001.

Kruglanski, A. W., Shah, J. Y., Fishbach, A., Friedman, R., Chun, W. Y., & Sleeth-Keppler, D. (2011). A theory of goal systems. *Advances in Experimental Psychology, 34*, 331-378. doi:10.1016/S0065-2601(02)80008-9

Kumar, V., Umashankar, N., & Park, I. (2014). Tracing the evolution and projecting the future of in-store marketing. *Review of Marketing Research, 11*, 27-56. doi:10.1108/S1548-643520140000011000

Kummu, M., de Moel, H., Porkka, M., Siebert, S., Varis, O., & Ward, P. J. (2012). Lost food, wasted resources: Global food supply chain losses and their impacts on freshwater, cropland, and fertilizer use. *Science of the Total Environment, 438,* 477-489. doi:10.1016.j.scitotenv.2012.08.092

Li, Y., Cheang, B., & Lim, A. (2012). Grocery perishables management. *Production and Operations Management*, *21*, 504-517. doi:10.1111/j.1937-5956.2011.01288.x

Legislative Council, State of Michigan. (2015). Immunity of food donors from civil liability, Act 136 of 1993. Retrieved from Michigan.gov.

Leedy, P. D., & Ormrod, J. E. (2012) *Practical research: Planning and design,* (10th ed.) New York, NY: Merrill.

Marshall, C., & Rossman, G. B. (2016). *Designing qualitative research* (6th ed.). Thousand Oaks, CA: Sage Publications.

Maslow, A. H. (1968). *Toward a psychology of being*. Princeton, NJ: Van Nostrand.

McCaslin, M. L., & Scott, K. W. (2003). The five-question method for framing a qualitative research study. *The Qualitative Report, 8*, 447-461. Retrieved from http://nova.edu/ssss/QR/QR8-3/mcaslin

McIntyre, L., Karden, L., Shyng, S., & Allen, K. (2014). Survey of observed food-handling practices at farmers' markets in British Columbia, Canada. *Food Protection Trends, 34,* 397-408. doi:10.1155/2015/131623

Miller, N. E. (1944). Experimental studies in conflict. In J. M. Hunt (Ed.), *Personality and the behavioral disorders, 1* (pp. 431–465). New York, NY: Roland Press.

Moustakas, C. (1994). *Phenomenological research methods*. Thousand Oaks, CA: Sage.

Muhammad, S., Fathelrahman, E., & Ullah, R. U. (2015). Factors affecting consumers' willingness to pay for certified organic food products in United Arab Emirates. *Journal of Food Distribution Research*, *46*(1). Retrieved from http://fdrs.tamu.edu/

Munesue, Y., Masui, T., & Fushima, T. (2015). The effects of reducing food losses and food waste on global food insecurity, natural resources, and greenhouse gas emissions. *Environmental Economics and Policy Studies*, *17*(1), 43-77. doi:10.1007/s10018-014-0083-0

O'Reilly, M., & Parker, N. (2012, May). Unsatisfactory saturation: A critical exploration of the notion of saturated sample sizes in qualitative research. *Qualitative Research Journal*, 1-8. doi:10.1177/1468794112446106

Pino, G., Peluso, A. M., & Guido, G. (2012). Determinants of regular and occasional consumers' intentions to buy organic food. *Journal of Consumer Affairs*, *46*(1), 157-169. doi:10.1111/j.1745-6606.2012.01223.x

Pitts, S. B. J., Gustafson, A., Wu, Q., Mayo, M. L., Ward, R. K., McGuirt, J. T., & Ammerman, A. S. (2014). Farmers' market use is associated with fruit and vegetable consumption in diverse southern rural communities. *Nutrition Journal*, *13*(1), 1-3. doi:10.1186/1475-2891-13-1

Polkinghorne, D. E. (1989). Phenomenological research methods. In R.S. Valle & S. Halling (Eds.) *Existential-phenemenological perspectives in psychology* (pp. 41-60). New York: Plenum.

Redman, E., & Redman, A. (2014). Transforming sustainable food and waste behaviors by realigning domains of knowledge in our education system. *Journal of Cleaner Production*, *64*, 147-157. doi:10.1016/j.jclepro.2013.09.016

Rijpkema, W. A., Rossi, R., & van der Vorst, J. (2013). Effective sourcing strategies for perishable product supply chains. *International Journal of Physical Distribution & Logistics Management, 44*, 494-510. doi:10.1108/IJPDLM-01-2013-0013

Rinier, J. W., & Curatola, A. P. (2016). Enhanced charitable deduction for food inventory: Non-C corporation businesses are eligible to claim a deduction of up to 15% of their net income for qualified donations of "apparently wholesome food" inventory beginning in 2016. *Strategic Finance*, *98*(6), 16-18. Retrieved from http://www.imanet.org

Salemdeeb, R., Ermgassen, E. K. H. J., Kim, M. H., Balmford, A., & Al-Tabbaa, A. (2017). Environmental and health impacts of using food waste as animal feed: A comparative analysis of food waste management options. *Journal of Cleaner Production, 140*, 871-880. doi:10.1016/j.jclepro.2016.05.049

Schneider, F. (2012). The evolution of food donation with respect to waste prevention. *Waste Management. 33*, 755-763. doi:10.1016/j.wasman.2012.10.025

Scholz, K., Eriksson, M., & Strid, I. (2015). Carbon footprint of supermarket food waste. *Resources, Conservation and Recycling*, *94*, 56-65. doi:10.1016/j.resconrec.2014.11.016

Soysal, M., Bloemhof-Ruwaard, J. M., Meuwissen, M. P., & van der Vorst, J. G. (2012). A review on quantitative models for sustainable food logistics management. *International Journal on Food System Dynamics*, *3*(2), 136-155. Retrieved from http://www.fooddynamics.org

Stefan, V., van Herpen, E., Tudoran, A. A., & Lähteenmäki, L. (2013). Avoiding food waste by Romanian consumers: The importance of planning and shopping routines. *Food Quality and Preference*, *28*, 375-381. doi:10.1016/j.foodqual.2012.11.001

Theotokis, A., Pramatari, K., & Tsiros, M. (2012). Effects of expiration date-based pricing on brand image perceptions. *Journal of Retailing, 88*, 72-87. doi:10.1016/j.jretai.2011.06.003

Thyberg, K. L., & Tonjes, D. J. (2015). Drivers of food waste and their implications for sustainable policy development. *Resources, Conservation and Recycling, 106,* 110-123. doi:10.1016/j.resconrec.2015.11.016

Tiwari, A. (2016). Mystery Date: Advocating for a Harmonized System of Expiration Date Labeling of Food. *Vanderbilt Journal of Transnational Law*, *49*(5), 1447-1475. Retrieved from www.law.vanderbilt.edu%2Fjournal%2Fhome.html

Tootelian, D. H., Mikhailitchenko, A., Varshney, S. B. (2012). Can producing and marketing healthy foods create a healthy economy? *Journal of Food Products Marketing*, *18*, 242-256. doi:10.1080/10454446.2012.668376

Trebbin, A. (2014). Linking small farmers to modern retail through producer organization: Experiences with producer companies in India. *Food Policy*, *45*, 35-44. doi:10.1016/j.foodpol.2013.12.007

Tunc, T. (2012). Less sugar, more warships: Food as American propaganda in the First World War. *War in History*, *19*, 193-216. doi:10.1177/0968344511433158

US EPA. (2012). *Basic information about food waste*. United States Environmental Protection Agency. Retrieved from http://www.epa.gov/osw/conserve/materials/organics/food/fd-basic.htm

van Donselaar, K. H., & Broekmeulen, R. (2012). Approximations for the relative outdating of perishable products by combining stochastic modeling, simulation and regression modeling. *International Journal of Production Economics, 140*, 660-669. doi:10.1016/j.ijpe.2012.02.023

van Manen, M. (2014). *Phenomenology of practice: Meaning-giving methods in phenomenological research and writing.* Walnut Creek, CA: Left Coast Press.

Venkat, K. (2012). The climate change and economic impacts of food waste in the United States. *International Journal on Food System Dynamics, 2*, 431-446. Retrieved from http://www.fooddynamics.org

Wang, X., & Li, D. (2012). A dynamic product quality evaluation based pricing model for perishable food supply chains. *Omega*, *40*, 906-917. doi:10.1016/j.omega.2012.02.001

Wie, S., & Giebler, K. (2013). Nonfood-related challenges and resources affect functioning of food banks. *Journal of Foodservice Business Research, 16*, 76-84. doi:10.1080/15378020.2013.761044

Yin, R. K. (2014). *Case study research design and methods* (5th ed.). Thousand Oaks, CA: Sage.

Yu, M., & Nagurney, A. (2013). Competitive food supply chain networks with application to fresh produce. *European Journal of Operational Research*, *224*, 273-282. doi:10.1016/j.ejor.2012.07.033

Appendix A: Interview Protocol Grid

Food Waste Reduction Strategies in Supermarkets: The Lived Experiences of Perishable Food Managers in Michigan

Interview Protocol

Participant ID:

Interview Protocol	
What you will do	**What you will say—script**
Introduce the interview and set the stage—often over a meal or coffee	Thank you ____ for taking the time to meet with me to discuss your lived experiences managing food waste at your store. We will be following an interview protocol, but please ask questions or make clarifications as we go along. I want this to be a comfortable exchange of information and I also want to be certain I am capturing your experiences accurately. The interview will take approximately 1 hour.
• Watch for non-verbal queues • Paraphrase as needed • Ask follow-up probing questions to get more in-depth	1. What is your lived experience as a supermarket manager reducing food waste through a donation protected by the Good Samaritan Food Donation Act?
Wrap up interview thanking participant	Thank you again _____ for sharing your lived experiences managing food waste with me.
Schedule follow-up member checking interview	We discussed how important it is that I capture your lived experiences accurately. So, I will take the recording of our discussion and transcribe it as well as document any thoughts or follow up items. May we meet again on [suggest date] to review the write up to

	make sure I have captured your experiences accurately?
Introduce follow-up interview and set the stage	Thank you _____ for taking the time to follow up on our interview from [DATE]. I have documented our meeting and would like to review the transcript and write up with you.
Share a copy of the succinct synthesis for each individual question	____, I've included a copy of the interview transcript and write up for you to follow along. Please let me know if there is anything you would like me to correct or clarify as we move through the record.
Bring in probing questions related to other information that you may have found—note the information must be related so that you are probing and adhering to the IRB approval.	1. What is your lived experience as a supermarket manager reducing food waste through a donation protected by the Good Samaritan Food Donation Act? A synthesis of the response is included for member checking.
	2. Did I capture what you shared during the interview?
	3. Is there anything you would like to add or clarify?